DOCUMENT RESUME

ED 259 146 CE 041 826

TITLE	The Fourth Basic: Computer Skills. Final Report.
INSTITUTION	Hardin County Board of Education, Elizabethtown, Ky.
SPONS AGENCY	Kentucky State Dept. of Education, Frankfort.
PUB DATE	18 Jun 84
NOTE	117p.
PUB TYPE	Reports - Descriptive (141) -- Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Basic Skills; *Computer Assisted Instruction; *Computer Literacy; Computer Science Education; Curriculum Guides; Data Processing; High Schools; Material Development; Office Occupations Education; Program Development; Remedial Instruction; *Remedial Programs; Teaching Methods; *Tutoring; *Typewriting; Vocational Education; Word Processing
IDENTIFIERS	Kentucky (Hardin County); *Keyboarding

ABSTRACT

Traditionally, the fundamental goal of all American education has been to provide students with adequate competencies in reading, writing, and mathematics. A year-long project, conducted at three high schools in Hardin County, Kentucky, provided for the development of a fourth basic: computer skills. Through this project, computer skills were applied to existing subject areas through two curriculum strategies. First, computer-assisted instruction was used as a delivery system for remedial instruction to high school students. In this respect, this basic skills-strengthening curriculum was designed to use adult volunteers and peers as tutors in the program. The recruitment of tutors was designed to foster the use of human resources from both the school and the community. Second, the project provided for the development of a computer keyboarding class that was both independent and interfaced with the traditional Typing I class. As a result of this project, the following products were developed: (1) an experimental keyboarding curriculum guide "Keyboarding and Word Processing Guide"; (2) an inservice manual for the training of peer and adult tutors "Micro Computer Basics--Basic Skills Computer Workshop: A Guide for the Training of Volunteer Tutors"; and (3) a final report covering the many facets of the projects. (These products are contained in this document.) (Author/KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

BEST COPY AVAILABLE

KY8413204

ED259146

A. TITLE PAGE

TYPE OF REPORT: Final Report

TITLE OF PROJECT: "The Fourth Basic: Computer Skills"

PROJECT DIRECTOR: Dr. Ernest G. Thro
Program Developer
Hardin County Schools
110 South Main Street
Elizabethtown, Kentucky 42701

Phone: 502-765-4186

LOCATIONS:

1. East Hardin High School
   Glendale, Kentucky 42740

2. North Hardin High School
   Radcliff, Kentucky 40160

3. West Hardin High School
   Stephensburg, Kentucky 42781

AGENCY: Hardin County Board of Education
110 South Main Street
Elizabethtown, Kentucky 42701

PROJECT NUMBER: E24 880 01-3F

REPORTING PERIOD: July 1, 1983 through
June 30, 1984

DATE SUBMITTED: June 18, 1984

ED244426

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

A Plott

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TABLE OF CONTENTS

I. Project Abstract.....1

II. Activities and Achievements.....2

A. Objectives.....2
B. Peer Tutorial Services.....3

1. Table One: Participant Population in the Peer Tutorial Program.....4

C. Keyboarding Study.....5

1. Curriculum Development.....6
2. Inservice Program.....6

III. Results, Conclusions, Recommendations on Findings, Methods, and Use of Materials.....6

A. The Peer Tutorial Program.....6

1. Table Two: Final Makeup of Participant Population in the Peer Tutorial Program.....7

2. Results of Study.....7

3. Conclusions and Recommendations.....7

B. The Keyboarding Curriculum.....8

1. The Population Sample.....8

a. Table Three: The Population Sample.....9

2. First Quarter Research.....9

a. Scoring Standards.....10

b. Table Four: Scoring Criteria for the Two and Three Minute Time Tests.....10

c. Table Five: Scoring Criteria for the Ten Minute Production Tests.....11

d. Test Results.....12

e. Table Six: Comparison of Mean Values for the Four Part Test Criteria.....13

f. Table Seven: Summary of Two Minute Time Test as Evaluated by the Wilcoxon Matched Pairs Test.....15

g. Table Eight: Summary of Three Minute Time Test as Evaluated by the Wilcoxon Matched-Pairs Test.....15

h. Table Nine: Summary of Paragraph Production Test as Evaluated by the Wilcoxon Matched-Pairs Test.....16

i. Table Ten: Summary of Sentence Production Test as Evaluated by the Wilcoxon Matched-Pairs Test.....16

3. Second Quarter Research.....17

a. Table Eleven: The Population Sample.....18

b. Scoring Standards.....19

c. Table Twelve: Scoring Criteria for the Five and Three Minute Time Tests.....19

d. Table Thirteen: Scoring Criteria for the Thirty Minute Production Test.....20

e. Table Fourteen: Comparison of Mean Values for the Three-Part Test Criteria.....21

f. Table Fifteen: Summary of the Three-Test Criteria for East Hardin High School.....23

g. Table Sixteen: Summary of the Three-Test Criteria for North Hardin High School.....23

h. Table Seventeen: Summary of the Three-Test Criteria for West Hardin High School.....24

4. Combined Conclusions.....25

IV. Appendix A - Training Guide for Tutorial Program.....27

V. Appendix B - Keyboarding and Word Processing Guide.....63

B. PROJECT ABSTRACT

Traditionally, the fundamental goal of all American education has been to provide each student with adequate competencies in reading, writing, and mathematics. This project provided for the development of a fourth basic: computer skills.

Through this project, computer skills (the fourth basic) were applied to existing subject areas through two curriculum strategies. First, computer-assisted instruction was used as a delivery system for remedial instruction to high school students. In this respect, this basic skills strengthening curriculum was designed to use adult volunteers and peers as tutors in the program. The recruitment of tutors was designed to foster the use of human resources from both the school and the community.

Second, this project provided for the development of a computer keyboarding class that was both independent and interfaced with the traditional Typing I class. Project products included: (1) an experimental keyboarding curriculum guide; (2) and inservice manual for the training of peer and adult tutors; and (3) a final report covering the many facets of the project. The entire project was designed for the period from July 1, 1983 through June 30, 1984.

C. ACTIVITIES AND ACHIEVEMENTS

Objectives. The primary objectives of this project included:

1. The recruitment and training of peer and adult tutors for a computer-assisted basic skills instructional program;
2. The development of an inservice instructional program for the training of peer and adult tutors;
3. The implementation of a minimum of twenty hours of computer-assisted instruction;
4. The evaluation of the computer-assisted program through a pre and post research design;
5. The integration of computer-assisted instruction into the existing Typing I curriculum;
6. The implementation of a research study pertaining to the differences, if any, between computer-assisted instruction and traditional Typing I;
7. The development of an experimental "Keyboarding" curriculum guide that is independent of the traditional Typing I class yet interfaced with the traditional curriculum;
8. The implementation and the revision of the "Keyboarding" curriculum guide according to experiences and activities;
9. The implementation of an inservice program for business and office teachers in Hardin County.

During the 1983-84 school year, a number of activities were completed pertaining to the previously identified objectives. This section of the report contains summaries of these activities.

Peer Tutorial Services. Some 209 students in grades 9 and 10 participated in the computer-assisted tutorial program. Of this number, 90 students served as tutors, while 119 pupils were participants. In addition, there were five adult tutors drawn from the communities of Glendale and Radcliff, Kentucky.

The program was housed at the East Hardin High School (Grades 9-12) located in Glendale, Kentucky; the North Hardin High School (Grades 10-12) located in Radcliff, Kentucky; the West Hardin High School located in Stephensburg, Kentucky; James T. Alton Junior High School (Grades 7-9) located in Vine Grove, Kentucky; Radcliff Junior High School located in Radcliff, Kentucky; and Hardin Central Junior High School located near Cecilia, Kentucky. Table One documents the participant population in terms of school, grade, and sex.

TABLE ONE

Participant Population in the Peer Tutorial Program

N = 119

Name of School	Grade 9 M	Grade 9 F	Grade 10 M	Grade 10 F	Total
1. J. T. Alton	3	7	0	0	10
2. East Hardin	5	6	5	5	21
3. Hardin Central	1	6	0	0	7
4. North Hardin	0	0	39	22	61
5. Radcliff	3	5	0	0	8
6. West Hardin	5	2	1	4	12
Totals	17	26	45	31	119

The methodology of the research design provided for 119 students to enroll on a voluntary basis in the computer-assisted instruction and participate in twenty hours of peer tutorial services in the basic skills (Reading, Language, and Mathematics). The students were selected on the basis of achievement test scores and teacher recommendations. Evaluation of the project was completed by comparing 1983 achievement test scores with 1984 examination results. The Comprehensive Tests of Basic Skills (Form U) was used as the research instrument.

Further, the ninety student tutors were selected on the basis of teacher recommendations and academic record. These students participated in an inservice training program consisting of six hours. Appendix A contains the curriculum guide for this phase of the project.

Keyboarding Study. The business education component of the project provided for the development of a computer keyboarding class that was both independent and interfaced with the traditional Typing I class. This phase of the project was housed in the three high schools of the school district. The instructors for the program were Ms. Carol Chitwood of East Hardin High School, Ms. Barbara Underwood of North Hardin High School, and Ms. Geri Morgan of West Hardin High School.

The research design provided for forty-five students to enroll in an experimental course of computer keyboarding in place of the traditional Typing I curriculum. Comparisons between this population sample and forty-five students who were enrolled in the traditional Typing I curriculum were made at the end of the first and second quarters of the school year. The purpose of the comparisons was to determine the differences, if any, between achievement in beginning typing skills. Both population samples were instructed by the same business education instructor.

Curriculum Development. Since July 19, 1983, some 76 hours have been devoted to developing the Keyboarding and Word Processing guide. Ms. Kara Burkett and Mr. Charles Bright of the State Department of Education assisted the staff in numerous ways. Appendix B contains the completed curriculum guide.

Inservice Program. On October 24, 1983, a three hour in-service program was held at East Hardin High School. Some fourteen business education instructors attended the program. During the first half of the session, the project staff provided a discussion pertaining to the first-draft of the curriculum, while the second phase of the program consisted of computer software demonstrations from major book companies.

D. RESULTS, CONCLUSIONS, RECOMMENDATIONS ON FINDINGS, METHODS, AND USE OF MATERIALS

This section of the report contains the research findings of the two studies. In order to facilitate the reader's understanding, the writer will review each study as a separate entity.

The Peer Tutorial Program

The Final Population Size. In the beginning, the total population consisted of 119 students. However, only 85 students completed the 20 hours of computer-assisted instruction. Table Two documents the research population for this phase of the study.

TABLE TWO

Final Makeup of Participant Population in the Peer Tutorial Program

N = 85

Name of School	Grade 9 M	Grade 9 F	Grade 10 M	Grade 10 F	Total
1. J. T. Alton	3	5	0	0	8
2. East Hardin	1	1	4	4	10
3. Hardin Central	1	5	0	0	6
4. Radcliff	2	4	0	0	6
5. North Hardin	0	0	29	14	43
6. West Hardin	5	2	1	4	12
Totals	12	17	34	22	85

Results of Study. A review of pre (1983) and post (1984) Comprehensive Tests of Basic Skills (Form U) total test battery scores revealed that the average academic achievement growth was 20 months. Growth of this caliber is well above expectations, since the mean growth during the seven month period was 2.9 months for every four weeks of school.

Further, the 29 freshmen had a mean academic achievement growth of 13 months while the sophomore pupils had an average growth of 23 months. Finally, 15 members of the freshman class and 32 members of the sophomore class registered total battery scores within the average range of test performance (stanines 4 through 6). This group of participants accounted for 55.2% of the final population.

Conclusions and Recommendations. Based on the previously reviewed data, the following conclusions and recommendations can be made:

1. A tutorial program of computer-assisted instruction is an economically way to deliver basic skills instruction;
2. Sophomore students are more accepting of the process than freshman pupils;
3. The program should be continued during the 1984-85 school year;
4. Other school districts throughout the state should replicate the instructional strategy.

The Keyboarding Curriculum

The Population Sample. In obtaining the population sample for the keyboarding research project, Dr. Ernest G. Thro, Program Developer for the Hardin County Schools, selected students on the basis of a matched-subject research design. The actual matched design paired students on the basis of sex, grade level, age, and overall grade point average. Also, all students (both control as well as experimental group) were required to be enrolled under one of the project teachers. The three project instructors were: (1) Ms. Carol Chitwood, East Hardin High School; (2) Ms. Barbara Underwood, North Hardin High School; and (3) Ms. Geri Morgan, West Hardin High School.

The total population consisted of forty-five matched-pairs. Further, the mean grade point average for the matched-pairs was 2.82; while the mean age was 15.8 years. The sex distribution of each matched-group was 27 males and 18 females. In terms of class membership, 2 students in each paired-group were freshmen, 13

pupils were sophomores, 16 members were juniors, and 14 students were seniors. Table Three documents both population samples in terms of school, sex, grade point average and mean age.

TABLE THREE

The Population Sample

N = 90

	School	Class Description	Sex M	Sex F	Grade Point Average	Mean Age
1.	East Hardin	Keyboarding	6	9	2.87	15.7
	East Hardin	Typing I	6	9	2.87	15.7
2.	North Hardin	Keyboarding	13	2	2.80	15.9
	North Hardin	Typing I	13	2	2.80	15.9
3.	West Hardin	Keyboarding	8	7	2.80	15.7
	West Hardin	Typing I	8	7	2.80	15.7
4.	District	Keyboarding	27	18	2.82	15.8
	District	Typing I	27	18	2.82	15.8

First Quarter Research. This section of the research report covers the data pertaining to the first quarter multi-examination battery. The project teachers developed four sets of tests that were given to both the experimental and control groups during the week of October 17th through October 21st. The four common examinations consisted of (1) a two minute time test; (2) a three minute time test; (3) a ten minute production test pertaining to the copying of meaningful paragraphs; and (4) a ten minute production test dealing with transcripting unrelated sentences.

Scoring Standards. The project teachers also developed a scoring criteria for the four examinations. In this respect, the two and three minute time tests were evaluated by subtracting the errors from the gross word count and dividing by the number of minutes. The obtained raw score was then converted to a standard grading scale. Table Four contains the scoring criteria for this phase of the testing program.

TABLE FOUR

Scoring Criteria for the Two and Three Minute Time Tests

Net Words Per Minute	Grading Scale
31	100
30	99
29	98
28	96
27	94
26	92
25	91
24	90
23	89
22	88
21	87
20	86
19	84
18	83
17	82
16	81
15	80
14	79
13	78
12	77
11	75
10	70
1-9	65

The two ten minute production tests were evaluated by obtaining both the line and error counts. These two raw scores were then converted to the grading criteria. Finally, the two obtained grades were averaged to obtain a global measurement. Table Five contains the scoring criteria for the two production tests.

TABLE FIVE

Scoring Criteria for the Ten Minute Production Tests

Lines	Grading
30	99
29	98
28	97
27	96
26	95
25	94
24	93
23	92
22	91
21	90
20	89
19	88
18	87
17	85
16	83
15	81
14	80
13	79
12	77
11	75
10	73
9	71
8	70

Errors	Grading Scale
1	99
2	98
3-4	97
5-6	96
7-8	95
9	94
10	93
11	92
12	91
13	90
14	89
15	88
16	87
17	86
18	85
19	84
20	83
21	82
22	81
23	80
24	79
25	78
26	77
27	76
28	75
29	74
30	73
31	72
32	71
33	70
34	69
35	68
36	67

Test Results. During the week of October 17th through October 21st, eighty-seven students completed the evaluation process. Two students were absent and one pupil had withdrawn from the program.

The treatment of the data consisted of (1) obtaining mean scores for each population group in regard to the four-test criteria; and (2) calculating Wilcoxon Matched-Pairs Test scores on the four-stage evaluation design.

The use of descriptive and non-parametric tests were chosen for this statistical analysis since little is known about the population distribution in relation to the national parent distribution.

Table Six contains the mean values for the four-part test criteria in terms of research group, school, and group size.

TABLE SIX

Comparison of Mean Values for the Four-Part Test Criteria

	School	Research Group	Group Size	Two Minute Time Test	Three Minute Time Test	Paragraph Production Test	Sentence Production Test
1.	East Hardin	Keyboarding	14	80.7	83.9	88.1	88.6
	East Hardin	Typing I	14	82.8	82.0	89.8	89.1
2.	North Hardin	Keyboarding	14	90.2	90.0	93.2	92.1
	North Hardin	Typing I	15	83.6	84.0	90.0	88.5
3.	West Hardin	Keyboarding	15	80.6	79.9	86.1	84.4
	West Hardin	Typing I	15	83.9	79.6	84.6	85.7
4.	District	Keyboarding	43	83.8	84.5	89.1	88.3
	District	Typing I	44	83.5	81.9	88.1	87.7

After reviewing the data summarized in Table Six, the researcher stated the following conclusions:

1. The observed mean scores revealed very little difference between the two groups;
2. The East Hardin data revealed that the Typing I students scored slightly better than their Keyboarding counterparts on three of the four tests;

3. The North Hardin data revealed that the Keyboarding students scored slightly better than their Typing I counterparts on all four tests;
4. The West Hardin data revealed the Keyboarding students outscored their Typing I counterparts on the three-minute time test and the paragraph production test; while the Typing I students outscored the computer group on the two-minute time test and the sentence production test;
5. District-wide (composite scores) the Keyboarding students scored slightly better than their Typing I peers on all four tests;
6. The Keyboarding students outscored their peers at all three schools on the three-minute time test.

In order to test the data for the possibility of significant differences between the two groups, Wilcoxon Matched-Pairs Tests were run on the data. The purpose of this analysis was to determine if either teaching approach was dominant.

Table Seven, Eight, Nine, and Ten contain summaries pertaining to the Wilcoxon Matched-Pairs study. In conducting the research each experimental student was paired with his/her control counterpart. In total, there were 43 matched pairs. One student was deleted since his counterpart did not complete the entire test battery.

Table Seven

Summary of Two Minute Time Test
as Evaluated by the Wilcoxon Matched-Pairs Test

School	Number of Paired N	Dominant Direction	Obtained T	Test of T
East Hardin	14	Typing I	40.0	NS*
North Hardin	14	Keyboarding	35.5	NS*
West Hardin	15	Typing I	45.0	NS*

*.05 level of significance for two tailed test

Table Eight

Summary of Three-Minute Time Test as
Evaluated by the Wilcoxon Matched-Pairs Test

School	Number of Paired N	Dominant Direction	Obtained T	Test of T
East Hardin	14	Keyboarding	44.5	NS*
North Hardin	14	Keyboarding	0.0	S*
West Hardin	15	Tie	52.5	NS*

*.05 level of significance for two tailed test

TABLE NINE

Summary of Paragraph Production Test as Evaluated by the Wilcoxon Matched-Pairs Test

School	Number of Paired N	Dominant Direction	Obtained T	Test of T
East Hardin	14	Typing I	40.5	NS*
North Hardin	14	Keyboarding	15.5	S*
West Hardin	15	Keyboarding	48.0	NS*

*.05 level of significance for two tailed test

TABLE TEN

Summary of Sentence Production Test as Evaluated by the Wilcoxon Matched-Pairs Test

School	Number of Paired N	Dominant Direction	Obtained T	Test of T
East Hardin	14	Typing I	38.5	NS*
North Hardin	14	Keyboarding	13.5	S*
West Hardin	15	Typing I	44.0	NS*

*.05 level of significance for two tailed test

The following conclusions were made from the data contained in Tables Seven, Eight, Nine, and Ten:

1. In 3 (25%) tests out of 12 tests, the data revealed significant differences in favor of the keyboarding curriculum;

2. In 9 (75%) tests out of 12 tests, the data revealed no significant differences between the two groups;
3. In 6 (50%) out of 12 tests, the dominant direction was in favor of Keyboarding instruction;
4. In 5 (41.7%) out of 12 tests,the dominant direction was in favor of Typing I instruction;
5. In 1 (8.3%) out of 12 tests, the dominant direction was tied between the two teaching approaches;
6. Based on this set of data, there seems to be a slight indication in favor of Keyboarding instruction.

Second Quarter Research. The original population consisted of forty-five matched-pairs. However, at the time of testing, there remained forty-three matched-pairs. The mean grade point average for the present matched-pairs was 2.82; while the mean age was 15.8 years. The sex distribution for each matched-group was 27 males and 16 females. In terms of class membership, 2 students in each paired-group were freshmen, 13 pupils were sophomores, 15 members were juniors, and 13 students were seniors. Table Eleven documents both population samples in terms of school, sex, grade point average and mean age.

TABLE ELEVEN

The Population Sample

N = 86

	School	Class Description	Sex M	Sex F	Grade Point Average	Mean Age
1.	East Hardin	Keyboarding	6	8	2.87	15.7
	East Hardin	Typing I	6	8	2.87	15.7
2.	North Hardin	Keyboarding	13	2	2.80	15.9
	North Hardin	Typing I	13	2	2.80	15.9
3.	West Hardin	Keyboarding	8	6	2.80	15.7
	West Hardin	Typing I	8	6	2.80	15.7
4.	District	Keyboarding	27	16	2.82	15.8
	District	Typing I	27	16	2.82	15.8

This section of the research report covers the data pertaining to the second quarter multi-examination battery. The project teachers developed three sets of tests that were given to both the experimental and control groups during the week of December 12th through December 16th. The three common examinations consisted of (1) a three minute time test; (2) a five minute time test; and (3) a thirty minute production test.

Scoring Standards. The project teachers also developed a scoring criteria for the three examinations. In this respect, the five and three minute time tests were evaluated by subtracting the errors from the gross word count and dividing by the number of minutes. The obtained raw score was then converted to a standard grading scale. Table Twelve contains the scoring criteria for this phase of the testing program.

TABLE TWELVE

Scoring Criteria for the
Five and Three Minute
Time Tests

Net Words Per Minute	Grading Scale
38	100
37	99
36	98
35	96
34	94
33	92
32	91
31	90
30	89
29	88
28	87
27	86
26	84
25	83
24	82
23	81
22	80
21	79
20	78
19	77
18	75
17	65
15	60
14	55

The thirty minute production test was evaluated by obtaining both the line and error counts. These two raw scores were then converted to the grading criteria. Table Thirteen contains the scoring criteria for the production test.

TABLE THIRTEEN

Scoring Criteria for the Thirty Minute Production Test

Grading Criteria Range	Grading Scale
455-475	99
425-454	97
405-424	95
375-404	92
345-374	90
314-344	87
276-313	82
237-275	78
200-236	76
176-199	73
153-175	70

The use of descriptive and non-parametric tests were chosen for this statistical analysis since little is known about the population distribution in relation to the national parent distribution.

Table Fourteen contains the mean values for the three-part test criteria in terms of research group, school, and group size.

TABLE FOURTEEN

Comparison of Mean Values for the Three-Part Test Criteria

	School	Research Group	Group Size	Three Minute Time Test	Five Minute Time Test	Thirty Minute Production Test
1.	East Hardin	Keyboarding	14	87.4	87.5	86.5
	East Hardin	Typing I	14	87.1	87.4	83.0
2.	North Hardin	Keyboarding	15	93.7	92.8	92.3
	North Hardin	Typing I	15	90.1	88.0	92.5
3.	West Hardin	Keyboarding	14	85.6	83.6	93.1
	West Hardin	Typing I	14	90.7	87.1	86.5
4.	District	Keyboarding	43	89.0	88.1	90.7
	District	Typing I	43	89.3	87.5	87.5

After reviewing the data summarized in Table Fourteen, the researcher stated the following conclusions:

1. The observed mean scores revealed very little difference between the two groups;
2. The East Hardin data revealed that the Keyboarding students scored slightly better than their Typing I counterparts on all three tests;

3. The North Hardin data revealed that the Keyboarding students scored slightly better than their Typing I counterparts on two of the three tests;
4. The West Hardin data revealed the Keyboarding students outscored their Typing I counterparts on the production test; while the Typing I students outscored the computer group on the two time tests;
5. District-wide (composite scores) the Keyboarding students scored slightly better than their Typing I peers on two of the tests;
6. The Keyboarding students outscored their peers at a ratio of 2 to 3.

In order to test the data for the possibility of significant differences between the two groups, Wilcoxon Matched-Pairs Tests were run on the data. The purpose of this analysis was to determine if either teaching approach was dominant.

Tables Fifteen, Sixteen, and Seventeen contain summaries pertaining to the Wilcoxon Matched-Pairs study. In conducting the research each experimental student was paired with his/her control counterpart. In total, there were 43 matched pairs.

TABLE FIFTEEN

Summary of the Three-Test Criteria for East Hardin High School as Evaluated by the Wilcoxon-Matched-Pairs Test

Test	Number Paired N	Dominant Direction	Obtained T	Test of T
Three-Minute Time Test	14	Keyboarding	48.5	NS*
Five-Minute Time Test	14	Keyboarding	37.0	NS*
Thirty-Minute Production Test	14	Keyboarding	27.0	NS*

*.05 level of significance for two tailed test.

TABLE SIXTEEN

Summary of the Three-Test Criteria for North Hardin High School as Evaluated by the Wilcoxon-Matched-Pairs Test

Test	Number of Paired N	Dominant Direction	Obtained T	Test of T
Three-Minute Time Test	15	Keyboarding	23.0	S*
Five-Minute Time Writing	15	Keyboarding	11.5	S*
Thirty-Minute Production	15	Typing I	33.5	NS*

*.05 level of significance for two tailed test.

TABLE SEVENTEEN

Summary of the Three-Test
Criteria for West Hardin High School
as Evaluated by the Wilcoxon-Matched-Paired Test

Test	Number of Paired N	Dominant Direction	Obtained T	Test of T
Three-Minute Time Test	14	Typing I	36.5	NS*
Five-Minute Time Test	14	Typing I	32.5	NS*
Thirty-Minute Production	14	Keyboarding	27.5	NS*

*.05 level of significance for two tailed test.

The following conclusions were made from the data contained in Tables Fifteen, Sixteen, and Seventeen:

1. In 2 (22.3%) tests out of 9 tests, the data revealed significant differences in favor of the keyboarding curriculum;
2. In 7 (77.7%) tests out of 9 tests, the data revealed no significant differences between the two groups;
3. In 6 (66.7%) out of 9 tests, the dominant direction was in favor of keyboarding instruction;

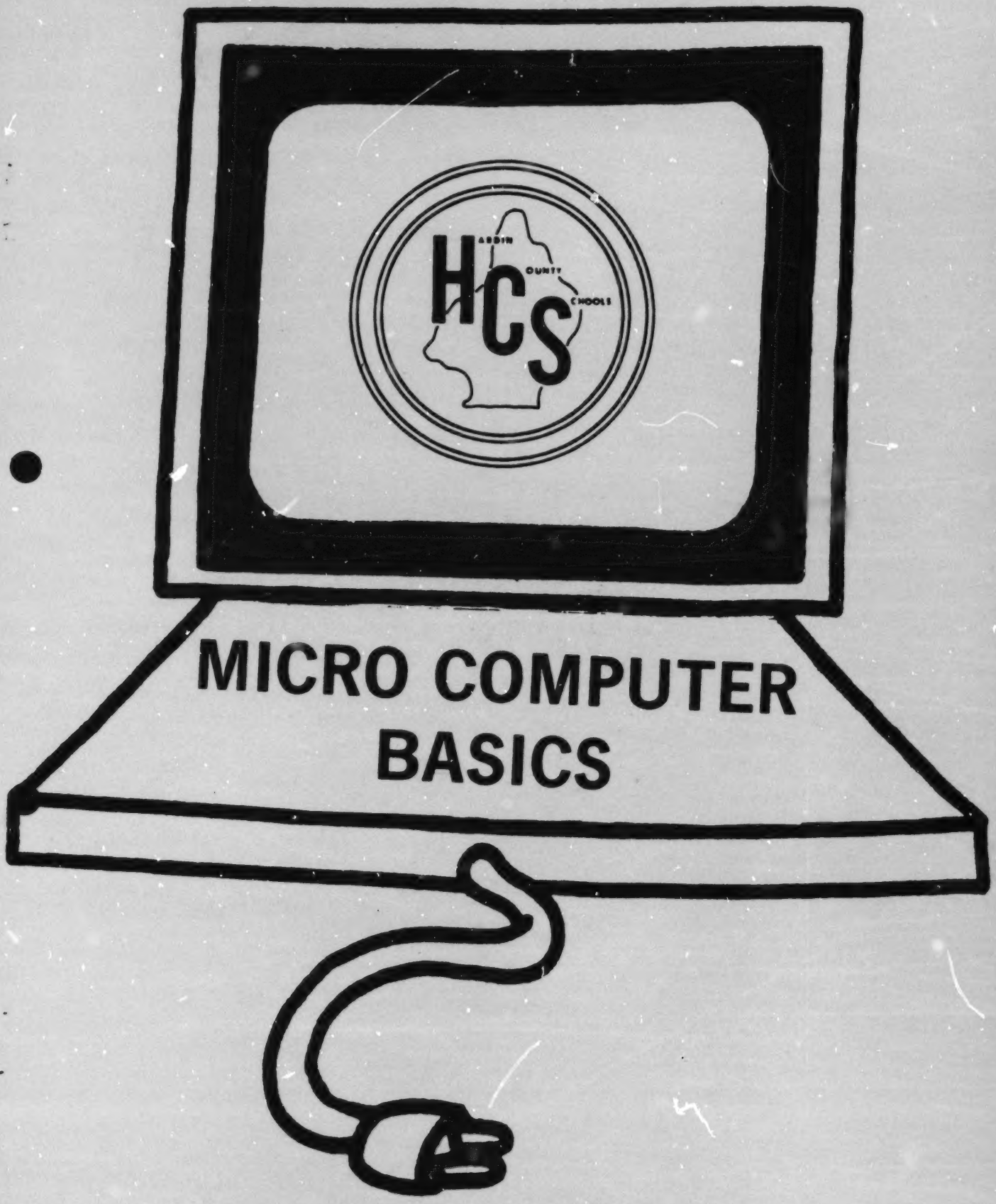
4. In 3 (33.3%) out of 9 tests, the dominant direction was in favor of Typing I instruction;
5. Based on this set of data, there seems to be a slight indication in favor of keyboarding instruction.

Combined Conclusions. After reviewing the results of both series of multi-examination batteries, the following conclusions were made:

1. The observed mean scores on both series of examinations revealed very little difference between the two groups;
2. The Keyboarding students scored slightly better than their Typing I counterparts 54.5% of the time;
3. The Typing I students scored slightly better than their Keyboarding counterparts 45.5% of the time;
4. In 5 (23.8%) observations out of 21 tests, the data revealed significant differences in favor of the Keyboarding curriculum;
5. In 16 (76.2%) observations out of 21 tests, the data revealed no significant difference between the two s groups;
6. In 12 (57.1%) observations, the dominant direction was in favor of Keyboarding instruction;
7. In 8 (38.1%) observations, the dominant direction was in favor of Typing I instruction;

8. In 1 (4.8%) observations, the dominant direction was tied between the two teaching approaches;
9. Based on both sets of data, there seems to be a slight indication in favor of Keyboarding instruction;
10. Based on both sets of data, a replication study should be conducted during the 1984-85 school year.

APPENDIX A


HCS
MICRO COMPUTER
BASICS

Basic Skills Computer Workshop

A Guide for the Training

of

Volunteer Tutors

****

By

Ms. Twyla Hanna
Computer Education Coordinator

and

Dr. Ernest G. Thro
Project Director

****

Dr. Stephen W. Towler
Superintendent of Schools
Hardin County Schools
110 South Main Street
Elizabethtown, Kentucky 42701

March 30, 1984

Preface

This inservice manual was designed to provide nine hours of inservice training for volunteers wishing to participate in a tutorial computer program. Further, the computer training portion of this inservice program was designed for use with Radio Shack equipment.

This manual was field-tested in the three junior high schools and three senior high schools of Hardin County. Some 150 students complete the workshop held in the various sites. The purpose of this curriculum guide is to provide materials for dissemination purposes. Thus, school districts wishing to implement similar projects will be able to replicate the original inservice presentations.

The writers of this guide would like to thank Mr. Donald McKinney, East Hardin High School; Mr. Bill Kelley, West Hardin High School; Mr. Ray Story, North Hardin High School; Mr. Cletus Coats, Hardin Central Junior High School; Mr. David Reed, J.T. Alton Junior High School; and Mr. Charlie Jones, Radcliff Junior High School for allowing the project staff to conduct this computer-assisted project. Without their assistance, the project could not have been implemented. Also, the authors would like to thank the 300 students who served as peer tutors or participants in this basic skill computer project. We wish all of these students success in their future academic studies.

The actual project provided for 150 participants and 150 tutors to undergo some 20 hours of computer-assisted instruction. The purpose of the instructional program was to raise academic achievement through the use of basic skills computer software. In evaluating this instructional program, comparisons were made between 1983 achievement test scores and 1984 achievement test scores. The results of this project are contained in the final project report.

March 30, 1984

Ms. Twyla Hanna
Computer Education Coordinator

Dr. Ernest G. Thro
Project Director

Table Contents

Agenda for Basic Skills Computer Workshop - First Day 1

Tutorial Registration Form 2

Basic Skills Inventory - Form A Answer Sheet 4

Basic Skills Inventory - Form A 5

Basic Skills Inventory - Form A Answers to Questions 10

Rectangular Prism Exercise 11

Basic Skills Inventory - Form B 12

Basic Skills Inventory - Form B Answers to Questions 17

Basic Skills Inventory - Form B Answer Sheet 18

Agenda for Basic Skills Computer Workshop - Second Day 19

Components of the TRS-80 20

Component Quiz 22

Answers to Component Quiz 23

Keys on Keyboard 24

Keyboard Quiz 25

Answers to Keyboard Quiz 26

Activity I - Loading and Executing a Program 27

Activity II - Entering a Program through Keyboard 28

Activity III - Modifying Simple Programs 30

Agenda for Basic Skills Computer Workshop
First Day

8:30 - Registration of Participants

8:45 - Getting to Know You!

A. Introduction of Participants;

B. Pairing of Participants in Groups of Two.

9:00 - Overview of Project

9:15 - Completing Information Forms

(See Pages 2 - 3 for Tutorial Registration Form)

9:30 - Basic Skills Inventory - Form A

(See Pages 4 -10 for Test Materials)

10:15 - BREAK

10:30 - Follow-Up Discussion on Inventory

11:15 - What's Your Question

11:45 - LUNCH

12:15 - Simulation of a Tutorial Session

(See Page 11 for Tutorial Materials)

1:00 - Follow-Up Discussion on Tutorial Session

1:45 - Presentation of Record Keeping Procedures

2:15 - BREAK

2:30 - Basic Skills Inventory - Form B

(See Pages 12 - 18 for Test Materials)

Tutorial Registration Form

1. Name _____

2. Address _____

   _____

3. City _____ ZIP Code _____

4. Date _____ Grade Level _____

5. School _____

6. Check all the subject areas you wish to provide tutorial services:

   _____ Mathematics _____ Spelling

   _____ English _____ Reading

   _____ Reference Skills

7. Check the grade level you wish to work with:

   _____ 9th _____ 11th

   _____ 10th _____ 12th

8. Indicate your study hall period:

   _____ 1st _____ 3rd _____ 5th

   _____ 2nd _____ 4th _____ 6th

9. Indicate the two days you wish to work each week:

   _____ Monday _____ Wednesday

   _____ Tuesday _____ Thursday

   _____ Friday

10. List the reasons why you wish to participate in this program:

    _____

    _____

    _____

    _____

    _____

11. List the types of computer programs you would like to work with:

_____

_____

_____

_____

_____

12. Indicate your average grade in mathematics during the 1981-82 school year:

_____ A _____ B _____ C

13. Indicate your average grade in English during the 1981-82 school year:

_____ A _____ B _____ C

14. Indicate your average grade in science during the 1981-82 school year:

_____ A _____ B _____ C

15. Indicate your overall average grade in all subjects during the 1981-82 school year:

_____ A _____ B _____ C

Basic Skills Inventory
Form A

Name _____ Date _____

Directions: Write the correct letter for each question on this answer sheet.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____
33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____
41. _____
42. _____
43. _____
44. _____
45. _____
46. _____
47. _____
48. _____
49. _____
50. _____

Basic Skills Inventory
Form A

Name _____ Date _____

1. The sum of 268, 27.7, and 3.14 is equal to:

   A. 2988.4
   B. 298.84
   C. 29.884
   D. 2.9884
   E. None of the above

2. The difference of 2871.68 and 28.4 is equal to:

   A. 2843.28
   B. 28432.8
   C. 28.4328
   D. 284.328
   E. None of the above

3. The product of 716.43 and 21.6 is equal to:

   A. 15474.88
   B. 154748.8
   C. 154.7488
   D. 15.7488
   E. None of the above

4. The quotient of 568 divided by 20.3 is equal to:

   A. 2798.03
   B. 279.803
   C. 27.9803
   D. 2.79803
   E. None of the above

5. Jack went to Brown's Store and bought $37.48 worth of groceries. He paid Mr. Brown with a fifty dollar bill. How much change did Jack receive?

   A. $12.53
   B. $12.48
   C. $12.63
   D. $12.28
   E. None of the above

6. Ms. West's class had the following scores on a recent math test: 88, 82, 76, 42, 87, 100, 86, 72, 98, and 82. Find the average score.

   A. 80.45
   B. 80.30
   C. 80.32
   D. 80.46
   E. None of the above

7. Mr. Buckles had a 16½ foot board that he wished to divide into 2 3/4 foot sections. How many sections did Mr. Buckles have?

   A. 3
   B. 6
   C. 5
   D. 4
   E. None of the above

8. Ms. Johnson made a cake which contained 2½ cups of walnuts, 2 3/4 cups of pecans, and 3/8 of a cup of peanuts. How many cups of nuts were in the cake?

   A. 5 7/8 cups
   B. 4 5/8 cups
   C. 6 3/8 cups
   D. 5 5/8 cups
   E. None of the above

9. Ms. Wilson had 7½ yards of cotton print dress material. She wished to divide this material into four parts. How many yards would be in each part?

   A. 1 5/8 yards
   B. 1 3/8 yards
   C. 1 1/8 yards
   D. 1 7/8 yards
   E. None of the above

10. It is 1:00 p.m. in London, England. What time is it in New York if this city is 6 hours behind London?

   A. 6:00 a.m.
   B. 7:00 a.m.
   C. 8:00 a.m.
   D. 7:00 p.m.
   E. None of the above

11. 2,768 ÷ 27 = _____

A. 102.52
B. 114.68
C. 101.71
D. 98.82
E. None of the above

12. 87.6 ÷ 2.37 = _____

A. 36.89
B. 32.69
C. 36.96
D. 32.86
E. None of the above

13. 5,280 ÷ 2.6 = _____

A. 2038.76
B. 2041.84
C. 2032.82
D. 2030.77
E. None of the above

14. 687 ÷ 2.13 = _____

A. 316.54
B. 320.54
C. 322.54
D. 318.54
E. None of the above

15. 7.68 ÷ .21 = _____

A. 32.42
B. 36.57
C. 36.47
D. 33.46
E. None of the above

16. 1 2/3 X 2 3/4 = _____

A. 4 7/8
B. 4 5/8
C. 4 1/2
D. 4 2/3
E. None of the above

17. 12 2/3 X 4 = _____

A. 47 2/3
B. 48 2/3
C. 49 2/3
D. 50 2/3
E. None of the above

18. 2/3 X 1 2/3 X 3 3/4 = _____

A. 4 7/8
B. 3 3/8
C. 12 5/8
D. 6 1/8
E. None of the above

19. 2/3 X 1 1/3 = _____

A. 1/4
B. 1/2
C. 3/8
D. 2/3
E. None of the above

20. 2/3 X 3/12 X 7/8 X 1/14 = _____

A. 1/64
B. 1/32
C. 1/16
D. 1/8
E. None of the above

21. 6 2/3 ÷ 1 3/4 = _____

A. 3 17/21
B. 3 2/3
C. 3 1/3
D. 3 10/21
E. None of the above

22. 3/4 ÷ 1/2 = _____

A. 1 1/2
B. 1 3/4
C. 1 3/8
D. 1 1/8
E. None of the above

23. 12 ÷ 2/3 = _____

A. 17
B. 18
C. 19
D. 20
E. None of the above

24. 16 2/3 ÷ 2 1/2 X 3 1/3 = _____

A. 22 2/9
B. 12 1/3
C. 22 1/6
D. 32 1/4
E. None of the above

25. 3/8 ÷ 1 1/2 X 2/3 = _____

A. 1/12
B. 1/24
C. 1/8
D. 1/6
E. None of the above

Directions: (26-40) In each of the following words there may be a misspelled word. Choose the letter of the misspelled word. If there are no misspelled words, choose the letter E.

26. A. movement B. concern C. goten D. drive

27. A. separate B. automobile C. light D. mecidine

28. A. regard B. outwit C. observe D. wutch

29. A. council B. mutch C. charge D. divine

30. A. acheivement B. success C. gate D. divide

31. A. mony B. salary C. income D. watch

32. A. sung B. power C. testement D. publish

33. A. telephone B. television C. telegram D. teltype

34. A. bell B. belfry C. mason D. snow

35. A. penicil B. mystery C. mister D. royal

36. A. globe B. weight C. month D. excellint

37. A. diagnose B. inventory C. dolar D. language

38. A. exercise B. finest C. single D. volume

39. A. elder B. sujbet C. necessary D. determine

40. A. spirit B. ultimate C. kitchan E. husband

Directions: The following sentences contain errors in punctuation and capitalization. Choose the letter of the error. If there are no errors, choose the letter E.

41. The boys who live in Knoxville is late for the movie.
A B C D

42. John was next to the door when the president come up the platform.
A B C D

43. The mailing address was louisville, Kentucky.
A B C D

44. Freshmen may not take only five classes for credit.
A B C D

45. Pupils may earn no more then two credits through correspondence.
A B C D

46. All transfer of Certified personnel will be done by May of each year.
A B C D

47. All vacancy will be filled by May of each year.
A B C D

48. John is a member of the Key Club.
A B C D

49. Each person who expect mail should contact the front desk.
A B C D

50. A grading scale has been adopted by the school Faculty.
A B C D

Basic Skills Inventory
Form A
Answers to Questions

1.	B	26.	C
2.	A	27.	D
3.	A	28.	D
4.	C	29.	B
5.	E	30.	A
6.	B	31.	A
7.	B	32.	C
8.	D	33.	D
9.	D	34.	E
10.	B	35.	A
11.	A	36.	D
12.	C	37.	C
13.	D	38.	E
14.	C	39.	B
15.	B	40.	C
16.	D	41.	B
17.	D	42.	C
18.	E	43.	C
19.	E	44.	B
20.	E	45.	B
21.	A	46.	A
22.	A	47.	A
23.	B	48.	E
24.	A	49.	B
25.	D	50.	D

Rectangular Prism:

A rectangular prism has three dimensions. These dimensions are (1) length; (2) width; and (c) height. The volume of a rectangular prism is found by multiplying the length times the width times the height.

Volume = $\ell \times w \times h$

Further, the standard cubic units are cubic inch, cubic foot, and cubic yard.

Solve the following problems:

1. A rectangular prism has a length of 8 1/2 feet, a width of 6 1/2 feet, and a height of 2 3/4 feet. What is the volume?

2. Find the volume of a rectangular prism that has a length of 2.35 inches, a width of 1.5 inches, and a height of 11 inches.

3. Mr. Brown constructed a garage which was 30 1/2 feet long, 22 1/4 feet wide, and 12 feet high. Find the volume of the garage.

4. Find the volume of a rectangular prism that has a length of 12.25 feet, a width of 8.50 feet, and a height of 11.25 feet.

Basic Skills Inventory
Form B

Name _____ Date _____

1. The sum of 178, 286.47 and 13.3 is equal to:

   A. 4.7777
   B. 47.777
   C. 477.77
   D. 4777.7
   E. None of the above

2. The difference of 716.48 and 98.5 is equal to:

   A. 61.798
   B. 617.98
   C. 6.1798
   D. 6179.8
   E. None of the above

3. The product of 586.43 and 16.7 is equal to:

   A. 9793.38
   B. 97933.8
   C. 979.338
   D. 97.9338
   E. None of the above

4. The quotient of 678 divided by 18.4 is equal to:

   A. 368.478
   B. 3.68478
   C. 3684.78
   D. 36.8478

5. Betty went to Jone's Store and bought $48.46 worth of groceries. She paid Mr. Jones with a fifty dollar bill. How much change did Betty receive?

   A. $1.64
   B. $1.54
   C. $1.44
   D. $1.34
   E. None of the above

6. Mr. Smith's class had the following scores on a recent history test: 82, 47, 36, 92, 100, 100, 32, 88, 92, and 72. FInd the average score.

   A. 74.10
   B. 74.20
   C. 74.30
   D. 74.40
   E. None of the above

7. Mr. Bacon had a 24 3/4 foot board that he wishes to divide into 2 3/4 foot sections. How many sections did Mr. Bacon have?

   A. 4
   B. 6
   C. 9
   D. 11
   E. None of the above

8. Ms. McKinney made a cake which contained 2 3/4 cups of pecans, 1 1/2 cups of walnuts, and 1/8 of a cup of peanuts. How many cups of nuts were in the cake?

   A. 3 7/8 cups
   B. 4 3/8 cups
   C. 5 1/8 cups
   D. 3 1/8 cups
   E. None of the above

9. Ms. Miller had 8 1/2 yards of cotton print dress material. She wished to divide this material into four parts. How many yards would be in each part?

   A. 2 5/8 yards
   B. 2 3/8 yards
   C. 2 1/8 yards
   D. 2 7/8 yards
   E. None of the above

10. It is 3:00 p.m. in Paris, France. What time is it in Boston if this city is 6 hours behind Paris?

    A. 6:00 a.m.
    B. 7:00 a.m.
    C. 8:00 a.m.
    D. 9:00 a.m.
    E. None of the above

11. 3,627 ÷ 29 = _____

A. 115.17
B. 125.07
C. 122.16
D. 107.18
E. None of the above

12. 92.8 ÷ 3.87 = _____

A. 33.69
B. 23.87
C. 33.96
D. 23.98
E. None of the above

13. 1,760 ÷ 7.8 = _____

A. 225.64
B. 222.68
C. 224.17
D. 223.18
E. None of the above

14. 857 ÷ 4.57 = _____

A. 187.53
B. 190.53
C. 177.53
D. 167.53
E. None of the above

15. 8.52 ÷ .41 = _____

A. 21.56
B. 18.77
C. 20.78
D. 22.66
E. None of the above

16. 2 2/3 X 1 3/4 = _____

A. 4 7/8
B. 4 2/3
C. 4 1/2
D. 4 5/8
E. None of the above

17. 14 2/3 X 5 = _____

A. 71 1/3
B. 72 1/3
C. 73 1/3
D. 74 1/3
E. None of the above

18. 3/4 X 4 1/3 X 3 2/3 = _____

A. 10 7/12
B. 11 5/6
C. 11 11/12
D. 6 5/6
E. None of the above

19. 3/4 X 1 2/3 = _____

A. 1 1/2
B. 1 1/3
C. 1 1/8
D. 1 1/4
E. None of the above

20. 3/4 X 4/6 X 5/8 X 2/5 = _____

A 1/8
B. 1/16
C. 1/32
D. 1/64
E. None of the above

21. 5 1/2 ÷ 2 2/3 = _____

A. 2 1/8
B. 2 1/16
C. 2 1/32
D. 2 1/64
E. None of the above

22. 2/3 ÷ 1/4 = _____

A. 2 1/2
B. 2 1/8
C. 2 1/4
D. 2 2/3
E. None of the above

23. 14 ÷ 3/8 = _____

A. 35 1/3
B. 36 1/3
C. 37 1/3
D. 38 1/3
E. None of the above

24. 18 2/3 ÷ 3 1/2 X 2 1/3 = _____

A. 3 1/2
B. 9 2/3
C. 12 4/9
D. 14 7/12
E. None of the above

25. 7/8 ÷ 1 1/2 X 2/3 = _____

A. 7/36
B. 7/9
C. 7/12
D. 7/18
E. None of the above

Directions: (26-40) In each of the following words there may be a misspelled word. Choose the letter of the misspelled word. If there are no misspelled words, choose the letter E.

26. A. because B. urgent C. found D. inspecter

27. A. conversation B. concede C. cunfront D. sullen

28. A. electric B. mechansim C. apparent D. swore

29. A. defendent B. confide C. neighbor D. proven

30. A. examine B. occasion C. convection D. caliber

31. A. vanish B. instrumen C. heard D. supreme

32. A. incidental B. private C. consistent D. second

33. A. because B. yearly C. watter D. above

34. A. experience B. viewpoint C. possibly D. restles

35. A. vanist B. address C. someone D. slacken

36. A. tense B. emerge C. grufly D. apartment

37. A. altomatic B. vague C. collar D. pinpoint

38. A. disapprove B. statment C. pocket D. shadow

39. A. deft B. concentrade C. slam D. twenty

40. A. sudden B. select C. ignition D. moistire

Directions: (41-50) The following sentences contain errors in punctuation and capitalization. Choose the letter of the error. If there is no errors, choose the letter E.

41. John along with the other boys were present at the show.
(A: along; B: other; C: were; D: show)

42. Lets mail the package to the N.C. Johnson Company.
(A: Lets; B: mail; C: package; D: N.C.)

43. Either the red curtains or the blue curtains will be used for the july 4th celebration.
(B: or; C: will; D: july)

44. All vancanies with the exception of one will be filled by elected officials.
(A: vancanies; B: one; C: filled; D: officials)

45. The students may choose no more then two classes from the elective list.
(A: students; B: choose; C: then; D: classes)

46. You will need to mail the application to lexington, Kentucky.
(A: need; B: mail; C: application; D: lexington)

47. John wasn't consulted about the new class.
(A: wasn't; B: consulted; C: new; D: class)

48. All with the exception of Mary was present for the class meeting.
(A: All; B: exception; C: was; D: class)

49. Dont go to the game if you aren't going to yell.
(A: Dont; B: if; C: aren't; D: yell)

50. Please do not eat the cake before Lunch.
(A: do not; B: eat; C: cake; D: Lunch)

Basic Skills Inventory
Form B
Answers to Questions

1. C
2. B
3. A
4. D
5. B
6. A
7. C
8. B
9. C
10. D
11. B
12. D
13. A
14. A
15. C
16. B
17. C
18. C
19. D
20. A
21. B
22. D
23. C
24. C
25. D
26. D.
27. C
28. B
29. A
30. E
31. B
32. E
33. C
34. D
35. A
36. C
37. A
38. B
39. B
40. D
41. C
42. A
43. D
44. E
45. C
46. D
47. A
48. C
49. A
50. D

Basic Skills Inventory
Form B

Name _____ Date _____

Directions: Write the correct letter for each question on this answer sheet.

1. _____	26. _____
2. _____	27. _____
3. _____	28. _____
4. _____	29. _____
5. _____	30. _____
6. _____	31. _____
7. _____	32. _____
8. _____	33. _____
9. _____	34. _____
10. _____	35. _____
11. _____	36. _____
12. _____	37. _____
13. _____	38. _____
14. _____	39. _____
15. _____	40. _____
16. _____	41. _____
17. _____	42. _____
18. _____	43. _____
19. _____	44. _____
20. _____	45. _____
21. _____	46. _____
22. _____	47. _____
23. _____	48. _____
24. _____	49. _____
25. _____	50. _____

Second Day

8:45 - Components of the TRS-80

(See Pages 20-21 for Instructional Materials)

9:05 - Component Quiz

(See Pages 22-23 for Test Materials)

9:10 - Keys on Computer Keyboard

(See Page 24 for Instructional Materials)

9:30 - Keyboard Quiz

(See Pages 25-26 for Test Materials)

9:35 - Activity I - Loading and Executing a Program

(See Page 27 for Instructional Materials)

10:20 - Break

10:30 - Activity II - Entering a Program through Keyboard

(See Pages 28-29 for Instructional Materials)

11:15 - Activity III - Modifying Simple Programs

(See Page 30 for Instructional Programs)

Components of the TRS-80

Input devices for the computer are the cassette tape player (or the disk drive) and the keyboard. When a programmer writes a program he/she enters that program through the keyboard. However, once a program has been saved onto another medium, either tape or diskette, it can be input by the tape player or the disk drive.

The memory of the Model 4 TRS-80 used in our labs is 64K. K represents approximately 1000 key strokes. Hence approximately 64,000 keystrokes of information can be stored in the computer at any one time. Keystrokes are often referred to as bytes of information by computer users. To the computer, which uses a binary language system, a byte is the equivalent of eight bits - a bit being either a zero or one. The computer translates each keystroke into a unique eight digit number consisting of a combination of zeroes and ones.

The computer contains two types of memory - RAM and ROM. RAM is an acronym for random access memory; whereas, ROM is an acronym for read only memory. The random access memory is available for use by the computer user to store information. However the read only memory is already pre-programmed with commands used in the BASIC language.

BASIC is the language used by the microcomputer. BASIC's complete name is Beginners' All-purpose Symbolic Instruction Code. The BASIC language uses common English words such as run, print, new, etc. to instruct the computer to perform certain

functions.

Output with our system can be in various ways. When the program is executing, output is generally to the video monitor. If the program needs to be removed from computer memory and saved for use at a later date, output is to the disk drive or the cassette tape recorder. If output of a hard copy of the program or if a printing of the contents of the monitor screen is desired, output is to the printer.

The following is an example of a basic program:

```
10 LET K = 0
20 LET K = 2(K+1)
30 PRINT K
40 GOTO 20
```

10, 20, 30, and 40 are called line numbers. It is necessary to number lines in a program. Generally line numbers are in multiples of ten to allow a programmer to alter a program in progress without renumbering. Lines numbered 11, 12, 13, etc. could be inserted into the above program if deemed necessary.

Print, let, and goto are statements understood by the computer. The Read Only Memory translates these statements for the computer. Print is a statement used to instruct the computer to exhibit alphanumeric characters on the video monitor. A Let statement assigns a value to a variable. The goto statement in the above program causes a continuous loop.

In order to enter information into the computer using the keyboard the ENTER key must be pressed after each line has been typed. The computer will understand that the line has been completed, and it will prepare for the next line by placing a flashing cursor at the beginning of the next line.

Quiz

1. On the TRS-80, the input devices are the:

   a. keyboard, cassette tape player and the disk drive;
   b. keyboard and power supply;
   c. video monitor and cassette tape player;
   d. disk drive and video monitor.

2. When entering a BASIC program into the computer, the last key that must be pressed is:

   a. shift;
   b. left arrow;
   c. ENTER;
   d. space bar.

3. The letter K represents approximately _____ bytes.

   a. 100;
   b. 64,000;
   c. 100,000;
   d. 1,000.

4. RAM is:

   a. Read Only Memory;
   b. Random Access Memory;
   c. Radio Shack Approximate Memory;
   d. Randomly Generated Memory.

5. PRINT, LET, GOTO are examples of BASIC:

   a. commands;
   b. loops;
   c. statements;
   d. lines.

6. The portion of the computer's memory which is pre-programmed with commands used in the BASIC language is:

   a. ROM;
   b. RAM;
   c. Randomly Generated Memory;
   d. General Access Memory.

7. A BASIC program must have which of the following:

   a. subroutines;
   b. print statements;
   c. loops;
   d. line numbers.

ANSWER KEY

1. A
2. C
3. D
4. B
5. A
6. A
7. D

Keys on Keyboard

The keyboard allows entry of all standard text and control characters. As with ordinary typewriters use [SHIFT] to enter the upper symbol on those keys containing two symbols.

The A-Z keys can produce either upper or lower case characters. There are two modes of operation: CAPS, in which the A-Z keys always produce capital letter; and ULC (upper/lower case), in which the A-Z keys produce lower case unless you press [SHIFT].

When you start the computer, the keyboard is in the CAPS mode. To switch to ULC, press the CAPS key or [SHIFT] [0]. To switch back, press the CAPS key or [SHIFT] [0] again.

Certain keys have special functions in BASIC.

[<-] Backspaces and erases the last character typed

[SHIFT] [<-] Starts over at the beginning of the line

[->] Tabs over to the next eight column boundary

[SHIFT] [->] Converts to 32 characters per line

[ENTER] Enters the line; (same as a return); BASIC will not interpret a line until ENTER is pressed.

[CLEAR] Cancels the current line, erases the display, converts to 64 characters per line, and positions to the upper left corner

[BREAK] Interrupts the current program or operation and prepares the computer for another keyboard command; cancels a cassette or line printer operation

RESET This is the orange-colored button at the upper right corner of the keyboard. To "start over" at the power-on message, you do not have to turn the unit off and on again.
Resetting will lose any program or data you had in memory.

Numeric Pad - The numbers are to the right of the keyboard; also on the top row of the keyboard. The pad at the right may be easier for children to use. When using numbers, l must be used rather than L, 0 rather than o.

Quiz

1. If you want to erase a letter (or character):

   a. press [BREAK];
   b. press [<-];
   c. give it to a postman;
   d. press [SHIFT] [0].

2. To clear the display:

   a. press [ENTER];
   b. turn of machine;
   c. press [<-];
   d. press [CLEAR].

3. When you turn on the computer it will be in the CAPS mode of operation; how is it switched to the ULC mode?

   a. press [SHIFT] [0];
   b. press [SHIFT] [->];
   c. press [ENTER];
   d. press [SHIFT] [0].

4. To enter anything into the TRS-80, you must first press:

   a. [CLEAR];
   b. [ENTER];
   c. [BREAK];
   d. any key.

5. To start over without shutting off power use which key?

   a. [ENTER];
   b. [<-];
   c. RESET ;
   d. any number key.

6. To erase or cancel a line press:

   a. [SHIFT] [<-];
   b. [ENTER];
   c. [CANCEL];
   d. [->].

7. To interrupt a program; this key is used.

   a. [BREAK];
   b. [<-];
   c. [->];
   d. [ENTER].

ANSWER KEY

1. B
2. D
3. D
4. B
5. C
6. A
7. A

Activity I

Follow these instructions to load and execute a BASIC program on the TRS-80:

(a) Turn on computer (switch under right side).

(b) Notice the red light beside the disk drive come on. Wait until the red light goes off.

(c) Open the door of the disk drive. Insert the diskette into the drive with the label up and the notch in the diskette to the left. Close the door of the disk drive.

(d) Press the orange reset button.

(e) Answer the prompt for the date, being sure you use the indicated format. Press ENTER.

(f) At the prompt for the time, press ENTER. The program should then begin executing.

(Load and run the programs on the supplied diskettes.)

Activity II

Follow these directions for entering and running a program from the keyboard:

(a) Enter the following programs at the keyboard. Remember to press ENTER after every line.

(b) After entering the program is completed, type RUN and press ENTER to execute the program.

(c) To stop the execution of the program, press BREAK.

(d) Type NEW before entering a new program at the keyboard.

Program 1

```
10 PRINT "HOW OLD ARE YOU";
20 INPUT A
30 PRINT "YOU CAN RETIRE IN";65-A;" YEARS."
40 END
RUN
```

Program 2

```
10 PRINT "TYPE YOUR HEIGHT IN FEET, INCHES"
20 INPUT F,I
30 LET H=F*12+I
40 PRINT "YOUR HEIGHT IN INCHES =";H
50 PRINT "YOUR HEIGHT IN CENTIMETERS =";H*2.54
60 END
RUN
```

Program 3

```
10 CLS
20 LET X = RND(128) - 1
30 LET Y = RND(48) - 1
40 SET(X,Y)
50 GOTO 20
RUN
```

Program 4

```
10 FOR A = 0 TO 6.3 STEP .2
20 LET Y = SIN(A)
30 PRINT TAB(20*Y+20); "your name"    'use your actual name!
40 NEXT A
50 GOTO 10
RUN
```

Activity III

Enter the following at the keyboard:

```
10 LET N=0
20 LET N=N+1
30 PRINT N
40 GOTO 20
```

(a) Run the program.

(b) Stop the execution of the program.

(c) In order to have the program count to 30 by ones rather than counting continuously, type 40 IF K<30 THEN 20.

(d) Run the program again. Notice the results of your change.

(e) Make changes in the program to produce programs with the following results:

(1) Begin the counting at 20 rather than 1.
(2) Count by 2's.
(3) Print the odd numbers from 1 to 39.
(4) Print an ending message, such as, Have a nice day!

APPENDIX B

KEYBOARDING

AND

WORD PROCESSING

GUIDE

****

PREPARED BY

MS. CAROL CHITWOOD
EAST HARDIN HIGH SCHOOL
GLENDALE, KENTUCKY 42740

MS. GERI MORGAN
WEST HARDIN HIGH SCHOOL
STEPHENSBURG, KENTUCKY 42781

MS. BARBARA UNDERWOOD
NORTH HARDIN HIGH SCHOOL
RADCLIFF, KENTUCKY 40160

****

DR. STEPHEN W. TOWLER
SUPERINTENDENT OF SCHOOLS
HARDIN COUNTY BOARD OF EDUCATION
110 SOUTH MAIN STREET
ELIZABETHTOWN, KENTUCKY 42701

MARCH 26, 1984

PREFACE

This curriculum guide was developed to provide business education teachers with a systematic approach to the teaching of computer keyboarding and word processing. As we move into the high tech age, it is extremely important that we understand the processes of keyboarding and word processing. This pioneering curriculum guide is an effort to fulfill these needs.

The guide that you will be using is an excellent source book for developing meaningful educational experiences for the computer classroom. Credit for this outstanding instructional guide must, of course, be given to Ms. Chitwood of East Hardin High School; Ms. Underwood of North Hardin High School; and Ms. Morgan of West Hardin High School. These three educators devoted many hours to the development of the final manuscript.

Like all curriculum guides, the text is only a skeleton of what can be developed within the modern computer laboratory. It remains for both students and teachers to complete the curriculum scenario.

March 30, 1984

Dr. Ernest G. Thro
Program Developer
Hardin County Schools

TABLE OF CONTENTS

Loading and Accessing Program 1

Computer Keyboarding 2

1. Computer Keyboarding Using Southwestern Microcomputer Keyboarding Software 3
2. Fundamental Computer Operation 5
3. Fundamental Printer Operation 7

Scripsit 9

1. Scripsit Commands 9
2. Scripsit: Instruction Summary Card 11
3. Editing Commands: Symbolic Representation 19

Word Processing 21

1. Centering Procedures 24
2. Format Practice: Centering 25
3. Tabulation Procedures 27
4. Format Practice: Tabulating 29
5. Memoes 31
6. Format Practice: Memoes 32
7. Letters 36
8. Format Practice: Letters 38
9. Manuscripts 40
10. Format Practice: Manuscripts 43
11. Saving and Loading of Documents 47

Bibliography 48

LOADING AND ACCESSING PROGRAM

The following steps are the procedures to be used in loading programs from either host or slave computers.

Step One: Turn on host and slaves by pressing switch which is located under the right edge of keyboard.

Step Two: Turn on buffer box for network by pressing power up button.

Step Three: Turn on printer.

Step Four: Computer screen (video) will display the term "Cass?" At this point, press the Enter key.

Step Five: When "Files?" appears on the computer screen, press the Enter key again.

Step Six: Type SYSTEM and press the Enter key again.

Step Seven: When *? appears, type 12363, and press the Enter key again.

Step Eight: When baud rate appears, you may either press the Enter key or type 19200 to speed up the loading process. If 19200 is used at the host computer, it must also be used at the slave computer. If for any reason a slave computer loses the program, 19200 must be used again to access the software program.

Step Nine: When Network 3 appears, type the word DISK and the number of the disk being used. (DISK4) Be sure to omit the space between the word DISK and the number.

Step Ten: If using Scripsit, type the word SCRIPSIT and press the Enter key. When command line appears at the bottom of the screen, the program is loaded and ready to use.

TOPIC: COMPUTER KEYBOARDING

OBJECTIVES	ACTIVITIES	RESOURCES	EVALUATION
1. To enable the students to learn the alpha-character of the alpha-numeric keyboard.	1. Students will complete lessons 1 through 15 of the Southwestern Keyboarding software package. This software package introduces all alphabetic characters.	1. Teacher's Guide for Microcomputer Keyboarding (Southwestern Publishing Company)	1. Students will be expected to master all alphabet characters. Also, students will be expected to keyboard sentences and paragraphs with accuracy and speed.
2. To enable the students to improve keyboarding speed and accuracy.	2. Students will complete lessons 16 through 25 of the Southwestern Keyboarding software package. These lessons are designed to improve speed, continuity and pattern responses.	2. Teacher's Guide for Microcomputer Keyboarding (Southwestern Publishing Company)	2. Students will be expected to increase accuracy and speed level.
3. To enable the students to learn the numeric characters on the alpha-numeric keyboard by touch.	3. Students will complete lessons 26 through 30. These lessons are designed to teach the numeric character.	3. Teacher's Guide for Microcomputer Keyboarding (Southwestern Publishing Company)	3. Students will be expected to master all the numeric characters.

COMPUTER KEYBOARDING USING SOUTHWESTERN MICROCOMPUTER KEYBOARDING SOFTWARE

The keyboarding software package consists of four diskettes with a total of thirty lessons. Lessons 1 through 15 introduces all alphabetic characters; while lessons 16 through 25 contains reinforcement and mastery drills of the alphabetic characters. Further, lessons 26 through 30 introduces the numeric keys. Finally, diskette 4 has five skill builders emphasizing speed, accuracy and control of the alpha-numeric keyboard.

Through the implementation of this project, the teaching staff encountered the following problems with the software package:

1. There was slowness in the loading of the diskettes;
2. There was no exit from the program;
3. There was the problem of having to change the four diskettes;
4. There was no introduction of symbols;
5. There was no introduction to the program;
6. There was poor documentation;
7. The cost of the software was extremely high.

In terms of the positive aspects of the software package, the teaching staff felt:

1. The software package had good graphics for illustration;
2. The software package provided for self-paced instruction;
3. The software package allowed more time for individualized instruction;

4. The software package provided for immediate feedback and reinforcement;

5. The software package emphasized accuracy over speed at the beginning.

In determining the most efficient uses for the software package, the teaching staff found:

1. The software package was useful for students who had been absent and were in need of make-up work;

2. The software package was useful for students who needed remedial or enrichment work;

3. The software package was useful for students who have special learning needs;

4. The software package was useful for students who needed to progress at a faster pace;

5. The software package was useful for supplemental instruction, but was not ideal as the only method of keyboarding instruction.

FUNDAMENTAL COMPUTER OPERATION

The teacher will explain the cursor movement to the students by demonstrating the use of the arrow keys (left, right, up, and down). In completing this lesson, the instructor should emphasize the use of the shift key and the arrow keys for direct movement: (1) to the beginning to the end of the document; and (2) to the beginning to the end of the line.

CURSOR MOVEMENTS

Cursor Movement	Operational Procedures
1.0 Left	1.1 Press the left arrow key (←).
	1.2 Alternate Instruction: Press CONTROL and A together.
2.0 Right	2.1 Press the right arrow key (→).
	2.2 Alternate Instruction: Press CONTROL and F together.

The teacher should also demonstrate changing from upper and/or lower case by using SHIFT and @. In this respect, the instructor should stress the shift must be held down while striking the @ (control key). Be sure to explain that referral to the control key means @ and not the CONTROL key on the model IV (TRS-80) keyboard, since this key does not function with Scripsit.

Cursor Movement	Operational Procedures
3.0 Up	3.0 Press the up arrow key (↑)
4.0 Down	4.0 Press the down arrow key (↓)
5.0 Beginning of a Line	5.0 Press SHIFT and left arrow key (←) together.
6.0 End of a Line	6.0 Press SHIFT and right arrow key (→) together.
7.0 Beginning of Document	7.1 Press SHIFT and up arrow key (↑) together.
	7.2 Alternate Instruction: Press CONTROL and up arrow key (↑) together.
8.0 End of Document	8.1 Press SHIFT and down arrow key (↓) together.
	8.2 Alternate Instruction: Press CONTROL and down arrow key (↓) together.

FUNDAMENTAL PRINTER OPERATION

Operational Procedures. In order to properly operate your TRS-80 printer, the instructor must follow some basic steps. These steps include:

Step One: Be sure that your printer has been: (1) turned on; (2) set for 10 pitch (pica print)*; and (3) on line.

Step Two: If you are using tract fed paper, you will need to check for the alignment of paper.

Step Three: To print a document from a slave computer, the basic print command is: (1) press the Break key; (2) Type P; and (3) press the Enter key.

Step Four: If you are printing more than one page, the following commands and steps need to be followed:

a. Press the Break key;
b. Type P;
c. Type P; (at this point, the phrase "Testing for Errors" will appear on the display screen. Then, the phrase "Press Enter to Print" will appear on the display screen.)
d. Press the Enter key to activate the printer.

In some versions of Scripsit, the Break P, I command will allow the instructor to print all commands used in producing the document. When using this command, the printer will not read format line, but will print all commands and format line.

Print	Press Break. Type P, and press ENTER.
Print with Invisible Lines	Press Break. Type P, I (or P, S, I) and press ENTER.
Print/Pause for Paper	Press Break. Type P, P (or P, S, P) and then press ENTER. After each page is printed, insert new paper and press ENTER to print the next page.

Multi-copies may be reproduced by entering @ R (together) before entering the print commands. Following this procedure, the operator must answer the message on the display screen by entering the number of times the document is to be printed. This procedure can be followed by using any of the above print commands.

*The standard type recommended for word processing is 10 pitch (pica) using 42 as the centering point when formatting documents.

SCRIPSIT COMMANDS

After introducing and discussing the Scripsit commands, load a rough draft document into the slave computers. This rough draft document has been prepared and saved by the teacher on a diskette. The rough draft should contain a format line to allow for printing, since formatting has not been introduced.

The following is a condensed listing of first-used editing commands. This is not a complete listing of editing commands. Rather, the list contains those editing commands that are most frequently used. For a complete list of all editing commands, refer to the Scripsit Summary Sheet or consult the Using Scripsit textbook by William James Haga.

Editing Commands

Item Category	Operational Procedures
DELETE character	Position cursor on character and press CONTROL and D together.
Word	Position cursor on any character in the word and press CONTROL and D together. Then press CONTROL and Z together.
Sentence	Position cursor on any character in the sentence and press CONTROL and D together. Then press CONTROL and X together.
Trailing Blanks or Contiguous Blanks	Position cursor on blank character and press CONTROL and D together. Then press CONTROL and F together.
Paragraph	Position cursor on any character in the paragraph and press CONTROL and D together. Then press CONTROL and C together. Answer the message by pressing Y to delete or N to cancel the instruction.

Item Category	Operational Procedures
To End of Text	Press CONTROL and D together, and then CONTROL and the down arrow key (↓) together. Answer the message by pressing Y to delete from the cursor position to the end of the document or N to cancel the instruction.
Insert (Character)	Position cursor at the insert point, press CONTROL and S together and then type the missing character.
Insert (Line)	Position cursor at the insert point and press CONTROL and S together. Then press CONTROL and X together. Type the new information and press CLEAR to close up the line.
Exchange (Word)	Position cursor on the second word of the two you want to exchange and press CONTROL and E together. Then press CONTROL and Z together.
Exchange (Paragraph)	Position cursor on the second paragraph of the two you want to exchange and press CONTROL and E together. Then press CONTROL and C together.

Scripsit™

word processing system

Instruction Summary Card

BEST COPY AVAILABLE

Labeling Keys

In the following summary, all keys that contain special labels are referred to by their label. Labels are included with the SCRIPSIT package and should be placed on the keys as follows:

Key	Label	Key	Label	Key	Label	Key	Label
↑	START	E	EXCHANGE	D	DELETE	C	PARA
↓	END	R	REPEAT	F	→	V	PAGE
Q	BLOCK	A	←	Z	WORD	⌘	CONTROL
W	WINDOW	S	INSERT	X	LINE		

To use a labeled key, hold down CONTROL (the ⌘ key) and then press the labeled key. Where only a single character is specified below, do not use the CONTROL key. For example, the key sequence for Delete Paragraph is DELETE PARA Y: press ⌘ and D together (DELETE), then ⌘ and C together (for PARA), then Y alone (in response to prompt on message line). In the sample text, the underline indicates cursor position. To abort a command sequence, use the CLEAR key.

Cursor Motion Commands

To do this:	Type this:	Text Before	Text After
Move cursor left	⊖ (or plain left arrow)	The cursor is.	The cursor is.
Move cursor right	⊖ (or plain right arrow)	The cursor is.	The cursor is.
Move cursor up one line	↑	The cursor is on this line.	The cursor is on this line.
Move cursor down one line	↓	The cursor is on this line.	The cursor is on this line.
Move cursor to beginning of line	SHIFT ⊖	The line starts here.	The line starts here.
Move cursor to end of line	SHIFT ⊖	The line ends here.	The line ends here.
Move cursor to start of text	SHIFT ↑ or START	This is the start of text.	This is the start of text.
Move cursor to end of text	SHIFT ↓ or END	This is the end of text.	This is the end of text.
Move cursor to top of display	WINDOW START	This is the top of the display.	This is the top of the display.
Tab cursor	TAB		

Inserting Text Boundary Markers

Text boundary markers tell the printer to 1) end the current line at that point, 2) do not justify the line, and 3) start a new line, paragraph, or page.

Force end-of-line	ENTER or LINE	End this line.	End this line. ■
New paragraph	PARA	End the paragraph.	End the paragraph ¬
New page	PAGE	End the page.	End the page. ↓

Basic Editing Commands

Overstriking Text

To do this:	Type this:	Text Before	Text After
To change text, type the new text over the old.		Now is thr Yome	Now is the time_

Deleting Text

Delete character	DELETE	Now is thhe time	Now is the time
Delete Word	DELETE WORD	Now is the the	Now is the
Delete Sentence	DELETE LINE	See the bird. See it sing. It sings.	See the bird. It sings.
Delete Blanks	DELETE =	I don't like so many _ blanks.	I don't like so many blanks.
Delete Paragraph	DELETE PARA Y	_ This is one paragraph.↵ So is this one.↵	_ So is this one.↵
Delete Block	Place cursor on Block Marker (see Labeling Blocks below) and type DELETE D	|A> This block is to be deleted.| |B> This one will still be here when I get back.|	|B> This one will still be here when I get back.|
Unmark Block	Place cursor on Block Marker and type DELETE U	|A> This block is to be unmarked.|	This block is to be unmarked.
Delete to End of Text	DELETE END Y	The end comes. This is the end.	The end comes.

Inserting Text

Insert Character	INSERT (type the character to be inserted)	Now is te time.	Now is the time.
Insert Several Characters	INSERT LINE (type new text) CLEAR	Now is for all good persons.	Now is the time for all good persons.

Exchanging Text

Exchange Words	Place cursor on second word and type EXCH WORD	Now is time the for all	Now is the time for all
Exchange Paragraphs	Place cursor on second paragraph and type EXCH PARA	This should come second.↵ _ This should come first.↵	This should come first.↵ _ This should come second.↵
Exchange Blocks	Place cursor on Block Marker and type EXCH BLOCK (one-character Block Designator)	|A> This block goes last.| |B> This one goes first.|	|B> This one goes first.| |A> This block goes last.|

Labeling Blocks

A block is a section of text that you may mark for future manipulation such as inserting, deleting or exchanging.

Open Block	BLOCK (one-character Block Designator)	The block starts here.	|A> The block starts here.
Close Block	BLOCK END	|A> The block ends here._	|A> The block ends here.|_

BEST COPY AVAILABLE

Formatting The Video Display

The video display may be formatted distinctly from the printout.

Video Line Width

To set video line width, type BREAK W (any number between 1 and 132) ENTER. To request the current line width, type BREAK ? W ENTER. The line width will be displayed on the message line.

Paragraph Indent

To set the number of spaces to be indented each time you insert a paragraph marker into text, type BREAK I (any number between 1 and 132) ENTER.
To request the current indent setting, type BREAK ? I ENTER.

Tab Settings

Tabs may be set all at once or one at a time.

To do this:	Type this:
To clear all tabs:	BREAK T ENTER
To clear one tab:	Place cursor on tab. Type BREAK T C ENTER.
To set several tabs:	Type BREAK T (tab, tab, tab . . .) ENTER.
To set one tab:	Place cursor on tab. Type BREAK T S ENTER.

Upper Case Lock:

If you have a keyboard which supports lower case, you may lock into upper case by pressing SHIFT CONTROL L. Press SHIFT CONTROL again to unlock.

Window Motion Commands

SCRIPSIT sees text as one large block — the video display serves as a "window" onto this block.

To do this:	Type this:	Text Before	Text After
Move window left one character	WINDOW ← (use plain left arrow.) CLEAR	he right-hand margin is here	The right-han margin is her
Move window right one character	WINDOW → (Use plain right arrow.) CLEAR	The right-han margin is her	he right-hand argin is here
Move window up one line	WINDOW ↑ CLEAR	second line of text. After this	This is the second line of
Move window down one line	WINDOW ↓ CLEAR	This is the second line of	second line of text. After this
Align window with cursor on right of display	WINDOW SHIFT ← (Use plain left arrow.)	this command we m shift the window	By using this c actually shift
Align window with cursor on left of display	WINDOW SHIFT → (Use plain right arrow.)	this command we m shift the window	command we may the window over

BEST COPY AVAILABLE

Global Replace, Delete, And Find

- The global instructions are used to search text for a specified string of characters and replace it with another string, delete it, or place the cursor on it.

Replacing a Text String

To delete a string of characters and replace it with a new one.

1. Move the cursor to the place where you wish to begin searching for the text string.

2. Type BREAK H ▷

3. Type the string you wish to replace exactly as it appears in text. Include blanks, punctuation, and special symbols.

4. Type ▷ followed by the string which is to replace the old string.

5. Press ENTER . The old string is found, replaced, and the cursor is placed on the new string.

Deleting a Text String

To delete a text string.

1. Move the cursor to the place where you wish to begin searching for the text string.

2. Type BREAK D ▷ .

3. Type the string exactly as it appears in text.

4. Press ENTER . The string is found and deleted.

Finding a Text String

To place the cursor on a specified string.

1. Move the cursor to the place where you wish to begin searching for the text string.

2. Type BREAK F ▷

3. Type the string exactly as it appears in text.

4. Press ENTER . The cursor moves to the first character of the string in text.

Note: The text strings you enter are retained in the TRS-80's memory until you type a new string. You may re-execute a global instruction simply by typing the command sequence but omitting the actual string. (For example, to find the next occurrence of a string you just located, type BREAK F ENTER . You may also use Repeat Command Mode to repeat an instruction up to 255 times (see Repeating Commands, below).

Repeating Commands

Any of the commands described on this card may be repeated automatically up to 255 times by using the REPEAT command key. To repeat a command, type REPEAT (any number between 2 and 255 — or ENTER for 255) and ENTER . When the computer asks you to ENTER REPEAT COMMAND, type the command sequence and it will be repeated the number of times you requested.

BEST COPY AVAILABLE

Formatting The Printout

BEST COPY AVAILABLE

The printout is formatted according to instructions included in the text. These instructions appear in "format lines."

Entering Format Lines

A format line must follow a text boundary marker and begin with a greater-than sign (>). The line is terminated at the next text boundary marker.

Format line instructions	Instruction =Default	Acceptable Values
Set page length (total number of lines per page)	PL=66	1 to 99
Set left margin	LM=12	0 to 131
Set right margin	RM=72	1 to 132
Set top margin	TM=6	1 to 89
Set bottom margin	BM=60	2 to 99
Set line spacing (number of lines to space between lines)	LS=1	1 to 99
Set paragraph format (line spacing between paragraphs)	PF=1	1 to 99
Justify text (on or off)	J=Y	Y or N
Center text (on or off)	C=N	Y or N
Print text flush right (on or off)	FR=N	Y or N
Center text vertically (on or off)	VC=N	Y or N
Print text (on or off)	P=Y	Y or N
Suppress widow lines at ends of pages (on or off)	WS=Y	Y or N
Begin printing header or footer on specified page number	H=1 F=1	1 to 65535
Turn header or footer on (print even or odd as per page number) or off	H=Y F=Y	Y or N
Turn header or footer on (start with even or odd without regard to page number)	H=O F=O	E or O E or O
Start numbering pages at specified number	PN=1	1 to 65535

Note: Format commands that affect page boundaries (TM, BM, VC, PL, PN, H, or F) should precede text for a new page. Place them at the start of text or after a page boundary marker. They may not be used within a header or footer.

This sample format line:	Tells SCRIPSIT to:
>LM=10 RM=70 TM=10 BM=60 J=N◙	Set the left margin to 10, the right margin to 70, the top and bottom margins to 10 and 60 respectively, and do not justify text.

Comment Lines

Comment lines are visible on the video display only and do not appear on the printed copy. A comment line must follow a text boundary marker and begin with a greater-than sign and an asterisk (> *). It is terminated by the next text boundary marker.

Copy Markers

Copy markers are used to designate a single block of text to be printed. To insert one into text, type BREAK C. They are displayed as up arrows (↑).

Headers and Footers

Use headers and footers to print the same block of text at the top or bottom of every page. The block may consist of the page number, title, or as you wish.

Entering the Header or Footer

To enter a header or footer into your text document, use the following sequence:

You type:	TRS-80 Replies:
BLOCK	BLOCK COMMAND MODE
H for header or F for footer	ODD, EVEN OR STANDARD (O, E OR S)?
O to print on odd-numbered pages, E for even-numbered pages, or S for all pages.	Header or footer block is opened in text.
Enter a line of instructions to format the header or footer (see Formatting the Printout above).	Your format line is entered into text.
ENTER to terminate the format line	■ (forced end-of-line symbol)
Type the actual text you wish to print on every page.	Your text is entered as part of the header or footer.
ENTER (or other text boundary marker) to terminate the header or footer	■ (the boundary marker is entered into text)
BLOCK END to terminate the header	] (block-end marker)

Page Numbering

You may mark the place in the header or footer to print the page number by inserting a page numbering block as follows:

You Type:	TRS-80 replies:
BLOCK P	[##
(Type up to five pound signs to represent the page number digits.)	#####
BLOCK END	]

Notes: Headers and footers must be placed either before the start of your document or immediately after a page boundary marker (↓). When using both a header and a footer on the same page, or if using odd- and even- headers or footers, they should follow each other so that the block-end marker for the first sits next to the block-open marker for the next. Format instructions which control page boundaries (TM, BM, VC, PL, PN, H and F) should be placed on a separate line outside the header or footer block.

Sample Header and Footer:

Video display shows:	Which means:
[HS> C+Y LM=10 RM=60■	Open a header block to print on every page. Center the text that follows and set the margins at 10 and 60.
Page [P> ##].■	Header text will consist of the word "Page" followed by the page number. For example, page 1 will read "Page 1."
■ ■	Two blank lines will follow the header.
][FS> F R Y LM 10 RM 60■	Close the header and open a footer block to print on every page.
■ ■ This is the footer.■	Two blank lines will precede the footer text, which will read "This is the footer."
]	Close the footer block.

BEST COPY AVAILABLE

Hyphenating text allows you to fit more copy on each line, thereby distributing space more evenly and improving the appearance of the final printout. Text is hyphenated one block at a time. Hyphenation should be the last step before requesting a printout of your document. To hyphenate, observe the following steps:

1. Make sure that the video display screen width is the same as the width you have set in your format line for the printed document (see Formatting the Video Display above).

2. Position the cursor at the left edge of the line you want to begin hyphenating and press the BLOCK command key (CONTROL and O together). BLOCK COMMAND MODE appears on the message line.

3. Type a hyphen (⊟). The hyphenation block is inserted into the text.

4. Move the cursor to the end of the last line you want to hyphenate and press the BLOCK END command keys. The block-end marker is inserted into text.

5. Type BREAK H ENTER. 'HOT ZONE (1-10)' appears on the message line. Type a number to define the hyphenation range (the smaller the number, the tighter the text will appear in the final document) and press ENTER.

6. The cursor appears at the first hyphenation opportunity, at the last character in the word where a hyphen may occur.

7. Move the cursor within the word to the place where you wish to hyphenate. Type a hyphen (⊟). If you do not wish to hyphenate the word, press ENTER.

8. The cursor will move to the next opportunity to hyphenate. Repeat Step 7.

9. At the end of the block the message HYPHENATION COMPLETE appears on the message line and the cursor moves back to the start of the hyphenation block.

Removing Hyphens

Before re-editing hyphenated text you should remove all hyphens. To do this,

1. Define the block if necessary.

2. Type BREAK H ENTER.

3. Answer the HOT ZONE message by typing 2.

4. When the cursor moves to the first hyphenation opportunity, press CLEAR.

Requesting Document Information

You may ask SCRIPSIT the following questions regarding your document:

To do this	Type this
Print line number of cursor	BREAK ? C ENTER
Print length of document in characters	BREAK ? L ENTER
Print available memory in characters	BREAK ? M ENTER
Print name of document in memory (SCRIPSIT disk version only)	BREAK ? N ENTER

BEST COPY AVAILABLE

Saving text to disk (SCRIPSIT disk version only)

To do this:	Type this:
Save document:	BREAK S ␣ (document name) ENTER
Update document:	BREAK S ENTER
Save to tape:	BREAK S ␣ T ENTER
Save in ASCII format:	BREAK S ␣ A ␣ (document name) ENTER
Verify tape save:	BREAK V ENTER

Saving text to tape (SCRIPSIT tape version only)

To do this:	Type this:
Save document:	BREAK S ENTER
Verify save:	BREAK V ENTER

Loading Text

Loading from disk (SCRIPSIT disk version only)

To do this:	Type this:
Load document:	BREAK N ␣ (document name) ENTER
Reload document:	BREAK L ENTER
Load and chain:	BREAK L ␣ C ␣ (document name) ENTER
Load from tape:	BREAK L ␣ T ENTER

Loading from tape (SCRIPSIT tape version only)

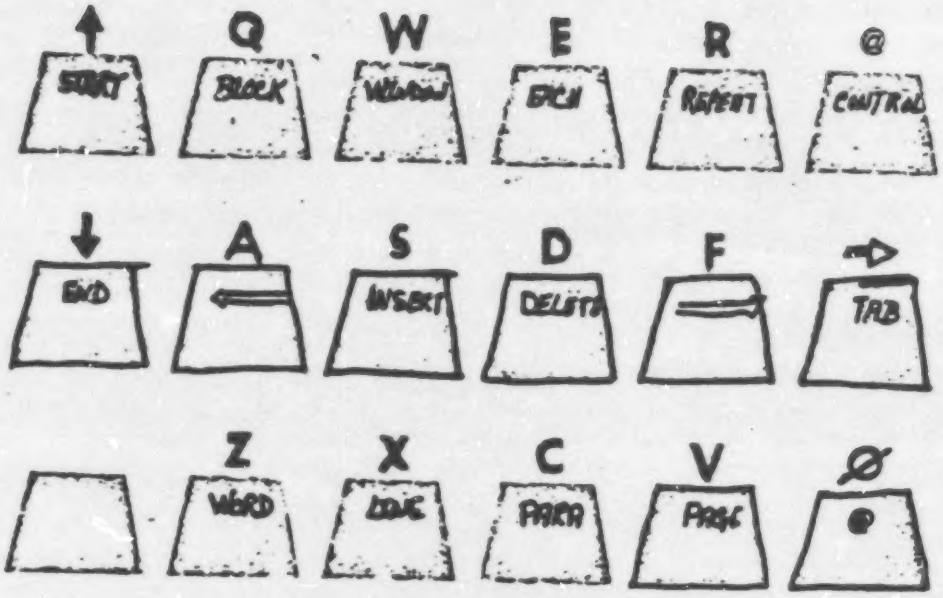
To do this:	Type this:
Load document:	BREAK L ENTER
Load and chain:	BREAK L ␣ C ENTER

Printing Text

The basic print command is: BREAK P ENTER. There are three "switches" available which instruct the computer to do special things with the printout. These switches are appended to the print command using commas. For example:
BREAK P ␣ S ␣ P – print formatted text to serial printer with pause between pages. Switches may be appended in any order.

To do this:	Type this:
Print to serial printer (through RS-232 interface)	BREAK P ␣ S ENTER
Pause between pages and wait for paper to be fed.	BREAK P ␣ P ENTER
Print unformatted text with comment lines and "invisible" characters showing.	BREAK P ␣ I ENTER
To halt a printout press	CLEAR

BEST COPY AVAILABLE



EDITING COMMANDS

SYMBOLIC REPRESENTATION

A. Control Keys

1. CAPS = Shift @ Shift Control
2. Clear Screen = @D@↓

B. Delete = @D

1. Delete Character = @D
2. Delete Word = @D@Z
3. Delete Sentence = @D@X
4. Delete Paragraph = @D@C
5. Delete Blanks = @D@F

C. Insert = @S

1. One Character = @S space
2. One Character = @S@X clear
3. One Block = @S@Q

D. Exchange = @E

1. Exchange Word = @E@Z
2. Exchange Paragraph = @E@C
3. Exchange Blocks = @E@Q

E. Line Format

>LM=12; RM=72; TM=b; BM=60; LS=2; PF=2; FR=N; J=N ENTER (Has to be first line - no blank line before line format. Enter always at the end of the line.)

F. Centering

1. >C=Y; LS=3 ENTER (Before Title Line)
2. >LS=2 ENTER

TOPIC: WORD PROCESSING

OBJECTIVES	ACTIVITIES	RESOURCES	EVALUATION
To introduce the students to the procedures for loading and accessing of a program diskette.	1. Both instructor and students will demonstrate the loading of the host and slave computers.	1. Bibliography list:* a. Using Scripsit; b. TRS-80 Software Library; c. TRS-80 Radio Shack-Scripsit Word Processing System Training Program;	1. Students will be expected to master the procedures for accessing a program.
To introduce the students to the cursor movement.	2. Both instructor and students will demonstrate cursor movements.	2. Bibliography list:* a. Using Scripsit; b. TRS-80 Software Library; c. TRS-80 Radio Shack-Scripsit Word Processing System Training Program;	2. Students will be expected to master the cursor movements.
To familiarize students with operational procedures for the printer.	3. Students will demonstrate the correct procedures for printing a document.	3. Bibliography list:* a. Using Scripsit; b. TRS-80 Software Library; c. TRS-80 Model 3 Disk System Owner's Manual.	3. Studens will be expected to obtain a printed copy from the printer.

TOPIC: WORD PROCESSING (Continued)

OBJECTIVES	ACTIVITIES	RESOURCES	EVALUATION
4. To introduce students to the editing commands for Scripsit.	4. Students will demonstrate the editing commands through the use of rough draft copies.	4. Bibliography list:* a. Using Scripsit; b. TRS-80 Model 3 Disk System Owner's Manual.	4. Students will be expected to prepare a corrected draft copy.
5. To enable the students to format and type centered documents.	5. Students will demonstrate the correct procedures for formatting and typing a centered document.	5. Bibliography list:* a. Using Scripsit; b. Word Processing Applications in Practice; c. Basic Keyboarding and Typewriter Applications	5. Students will be expected to prepare a correctly centered document.
6. To enable the students to format and type a tabulated document.	6. Students will demonstrate the correct procedures for formatting and typing a tabulated document.	6. Bibliography sources are the same as outlined under objective five.	6. Students will be expected to prepare a correctly tabulated document.
7. To enable the students to format and type a memo.	7. Students will demonstrate the correct procedures for formatting and typing an informational and interoffice memo.	7. Bibliography sources are the same as outlined under objective five.	7. Students will be expected to prepare a correctly typed memo.

TOPIC: WORD PROCESSING (Continued)

OBJECTIVES	ACTIVITIES	RESOURCES	EVALUATION
8. To enable the students to format and type letters.	8. Students will demonstrate the correct procedures for formatting and typing both business and personal letters.	8. Bibliography sources are the same as outlined under objective five.	8. Students will be expected to prepare correctly typed personal and business letters.
9. To enable students to format and type manuscripts.	9. Students will demonstrate the correct procedures for formatting and typing a manuscript.	9. Bibliography sources are the same as outlined under objective five.	9. Students will be expected to prepare a correctly typed manuscript.
10. To introduce students to the saving and loading process.	10. Students will demonstrate the correct procedures for saving and loading a document.	10. Bibliography list:* a. Using Scripsit; b. Word Processing Application in Practice *The reader should consult the Bibliography section of this curriculum guide for more detailed bibliographic data.	10. Students will be expected to demonstrate the correct procedures for saving and loading a document.

CENTERING PROCEDURES

When using Scripsit, the following centering procedures should be followed:

1. The computer will automatically do vertical and horizontal centering when VC = Y (vertical centering = yes) and C = Y (horizontal centering = yes) is included in the format line.
2. In order for the VC = Y to be correct, the BM must be equal to the number of vertical lines on the sheet of paper being used. (For a full sheet, the number is 66, while for a half-sheet, the number is 33.)
3. Since the default for a line space is one or single, it is easier to obtain a triple or double space by entering once or twice, rather than changing to LS = 3 or LS = 2.
4. When centering horizontally, the lines are typed at the left edge of the screen. However, when the document is printed, the manuscript will be centered. Therefore, there is no need to attempt to make the line appear centered on the screen.
5. To vertically center a problem in a reading position, adjust the bottom margin for two less lines. (VC = Y; BM = 31)

FORMAT LINE

> VC=Y BM= 33 C=Y (E)*

GUIDES TO TYPING SUCCESS

Daily Work Goals

Time, Effort, and Hard Work

Finish What You Start

*(E) denotes ENTER

>C=Y VC=Y BM=33_
GUIDES TO TYPING SUCCESS_

-

Daily Work Goals_

Time, Effort, and Hard Work_

Finish What You Start_

26

SAMPLE OF COPY PRINTED WITH INVISIBLE LINES
USING THE PRINT COMMAND OF P, I

TABULATION PROCEDURES

1. To figure the margins for a tabulation, the operator uses the mathematical method of adding the number of spaces and dividing by two. Before dividing the space line, add two extra spaces to allow for ENTER and any fraction resulting from the division. Using 42 as the center, subtract to obtain the LM (left margin) and add to obtain the RM (right margin).
2. To set the video width, the operator should press the Break key; type W=62 (This number is the difference between the LM and RM); then press the ENTER key. If last column wraps around on the screen, it will also wrap around when printed.
3. Next, the operator needs to verify LM (left margin) and RM (right margin) as well as tab stops.
4. To figure the first tab stop, the operator should begin from zero (excluding spaces in LM) and add the number of spaces in the longest line in the first column and the number of spaces between columns. To obtain the remainder of the tab stops, the operator continues to add to the previous number.
5. To set the tabs, the operator should follow this procedure: (1) press the Break key; (2) type T=14, 28, 42, 56, and (3) press the ENTER key. At this point, dots will appear in the command line to indicate the tab stops that have been set.

6. To move from one tab stop to the next one, the operator should use @→.
7. To center a document vertically, the operator should use VC = Y in the format line.
8. The default for justifying is "yes" and must be changed to "no" by including J=N in the format line of all documents when the right margin is not justified.

FORMAT LINE

> LM=11 RM=73 C=Y J=N VC=Y BM=33(E)

TABULATING

came	else	fair	hold	like
body	fine	ways	look	near
late	glad	life	none	plus
fold	mean	tell	what	whom

Set video line width for 62.

Set tabs:
(1) Press Break,
(2) Type T=14,28,42,56,
(3) Enter.

To move to tab stop use @ → .

```
>LM=12 RM=73 J=N C=Y BM=60 LS=2 TM=12_
TABULATING_
>LS=1 C=N_
_
>LS=2_
came            else            fair            hold
like_
body            fine            ways            look
near_
late            glad            life            none
plus_
fold            mean            tell            what
whom_
```

MEMOES

When introducing memoes, there are three new formats that will need to be previewed.

1. In order to use block style, the operator is required to change from the default of 5 spaces indention to an indention equal to zero. To set the indention for zero, press the break key and type I=O and the ENTER key.
2. In the main format line, PF=2 may be included to obtain a double space between paragraphs when @C is used to mark paragraphs. At the end of each paragraph, use @C to denote the next paragraph. However, do not enter as this will leave a triple space (TS) instead of a double space (DS) between paragraphs.
3. In word processing, it is recommended that you use one space after a period rather than the traditional two spaces.

FORMAT LINE

> LM=12 RM=72 TM=7 BM=60 PF=2 J=N(E)

October 29, 1983 --Enter 4 times

SUBJECT: Know Your Typewriter --Enter 3 times

How many lines can you type per inch on your typewriter? To find out, type with single spacing in a column at the left margin the figures 1 through 6. Then, measure the vertical space used. If your machine has standard spacing, the 6 lines should measure 1 inch or 2.54 centimeters deep.

Most typewriters made in the U.S.A. are set to type 6 lines to a vertical inch. European ones, however, are gauged to the metric system; thus, they are not made to fit exactly the vertical spacing of American machines or the ruled forms that are currently designed for our typewriters.

>LM=12 RM=72 TM=7 BM=60 PF=2 J=N_
October 29, 1983_

_
_

SUBJECT: Know Your Typewriter_

_

How many lines can you type per inch on your typewriter? To find out, type with single spacing in a column at the left margin the figures 1 through 6. Then, measure the vertical space used. If your machine has standard spacing, the 6 lines should measure 1 inch or 2.54 centimeters deep.$ Most typewriters made in the U.S.A. are set to type 6 lines to a vertical inch. European ones, however, are gauged to the metric system; thus, they are not made to fit exactly the vertical spacing of American machines or the ruled forms that are currently designed for our typewriters._

FORMAT LINE

> LM=4 RM=74 C=Y LS=1 TM=7 BM=60 J=N PF=2(E)

INTEROFFICE COMMUNICATION

> C=N(E)

TO: (Your name)

FROM: (Your teacher's name)

DATE: (Current date)

SUBJECT: Your Office Assignment

In lessons 129-135, you are to assume the role of special office assistant employed by Contemparary Office Associates, a Los Angeles based firm with offices in key cities of the United States.

At Contemparary Office Associates, you will work directly with Mr. Richard Buchanahan, a senior manager. As an employee, you will type the variety of materials presented in these lessons. At times you will be given only minimum directions; in some cases you will be asked to use your judgment in placing materials on the page.

All your typed work will be judged for acceptability for office use. This statement means that you must proofread your work, neatly correcting all errors, and that you must judge whether your work is acceptable before you submit it for final evaluation.

mb

```
>LM=4 C=Y LS=1 RM=74 TM=7 BM=60 J=N PF=2_
INTEROFFICE COMMUNICATION_
>C=N_
_
_
     TO:  (Your name)_
_
   FROM:  (Your teacher's name)_
_
   DATE:  (Current date)_
_
SUBJECT:  Your Office Assignment_
_
_
          In lessons 129-135, you are to assume the role of_
          special office assistant employed by Contemparary_
          Office Associates, a Los Angeles based firm with_
          offices in key cities of the United States.$
          At Contemparary Office Associates, you will work_
          directly with Mr. Richard Buchanahan, a senior_
          manager.  As an employee, you will type the_
          variety of materials presented in these lessons._
          At times you will be given only minimum_
          directions; in some cases you will be asked to_
          use your judgment in placing materials on the_
          page.$
          All your typed work will be judged for_
          acceptability for office use.  This statement_
          means that you must proofread your work, neatly_
          correcting all errors, and that you must judge_
          whether your work is acceptable before you submit_
          it for final evaluation._
_         mb_
```

LETTERS

1. When formatting a letter, using modified block style, the tab is set for half of the space line rather than the center of the computer. For example, in a 60 space line, the tab would be set for 30. (T=30) All letter parts to be typed at the center would be typed at 30.
2. All letters should be hyphenated to insure uniform line endings. To effectively accomplish hyphenation, set the video width for the number of spaces in the space line.
   a. The hyphenation process requires opening and closing blocks. To open a block, place the cursor at the beginning line of the body of the document and type @Q. Below the command line, the words "Block Command Mode" will appear.
   b. At this point, type a hyphen. The following symbol [->will appear on the screen.
   c. Move the cursor to the end of the document after the text boundary marker and close the block by typing @Q and @.↓ The closing marker] will appear on the screen. The operator then should press the break key and type H. At this point, Hot Zone (2...10?) will appear on the screen. This phase is asking how closely does the document need hyphenating. The suggested answer is 5.

d. The cursor will move automatically to the first suggested point needing hyphenation. The cursor is showing the line ending point. A decision must be made as to the acceptable point. Since the computer is indicating line endings, it will not move to the right. All divisions must be made to the left of the cursor.

e. If the cursor moves to a word that cannot be divided, press enter and the cursor will move to the next word. This process should be continued until all hyphenation has been done. When the message "hyphenation complete" appears below the command line, the document is ready to print.

> LM=12 RM=72 TM=14 BM=60 PF=2 J=N(E)

T=30

I=0

12648 Benham Road
Florissant, MO 63033
November 15, 1983 --Enter 4 times

Mr. Evan K. Dunn, Manager
Bel Air West Motor Hotel
4630 Lindell Boulevard
St. Louis, MO 63108

Dear Mr. Dunn

Thank you for an interesting summer of work at the Bel Air West. My assignment in the dining room gave me contracts with people under many different conditions. I gained much from my experience.

It is possible that I may apply for a part-time job later in the year, depending on the amount of study time that will be required for my courses at school. If I should apply for a job, may I use your name as a reference?

Your offer of work for next summer is sincerely appreciated. I shall let you know my plans early in the spring. In the meantime, thank you again for a pleasant summer and best wishes to you personally.

Cordially yours

Dave Fielder

>LM=12 RM=72 TM=13 BM=60 PF=2 J=N C=N_
12648 Benham Road_
Florissant, MO 63033_
November 15, 1983_

Mr. Evan K. Dunn, Manager_
Bel Air West Motor Hotel_
4630 Lindell Boulevard_
St. Louis, MO 63108_

Dear Mr. Dunn$
Thank you for an interesting summer of work at the Bel Air West. My assignment in the dining room gave me contracts with people under many different conditions. I gained much from my experience.$
It is possible that I may apply for a part-time job later in the year, depending on the amount of study time that will be required for my courses at school. If I should apply for a job, may I use your name as a reference?$
Your offer of work for next summer is sincerely appreciated. I shall let you know my plans early in the spring. In the meantime, thank you again for a pleasant summer and best wishes to you personally._

Cordially yours_

Dave Fielder_

MANUSCRIPTS

Producing manuscripts or reports will require the introduction of headers and/or footnotes. A header (top of page) or a footer (bottom of page) is a block used to give instructions to the computer. Headers and footers will not appear on the printout. Within the header/footer, a block can be used for page numbering so the computer will number each page consecutively. Also, within the header, it is also possible to include the title of the manuscript so it will appear on all pages.

1. To open the header or footer block, type @Q. Then type either H for header or F for footer. A message will appear below the command line asking if the header/footer is to appear on odd, even, or standard (on every page).
2. The operator must enter an O, E, or S. At this point, a decision must be made as to the location of the title and/or page number. This information is entered as FR=Y if the page number and/or title is to be printed at the right margin. To center this data, the operator would enter C=Y. If it is desired that the data appear at the left margin, no command needs to be entered as this operation is set by the margins.

3. After the operator has typed the desired command, the ENTER key is pressed. The following symbols will be displayed on the screen at this point:

   [HS>FR = Y -

   or

   [FS>C = Y -

4. If the title is to be included, it should be typed at this point and entered.

5. The next step is to open the page number block by entering @Q and typing P. The number symbol (#) is used to reserve the spaces needed for the digits in the page number. One # symbol for pages 1-9, two #'s for 10-99 and three #'s for 100-999. Close the block by entering @Q and @↓. The following symbols should then be displayed on the screen:

   [HS>FR = Y -

   Title of Manuscript -

   [P>##] -

6. After the page block, enter three times to allow for the triple space from the page number to the top line of the manuscript.

7. The top block is still open and needs to be closed by entering @Q and @↓.

8. To prevent header/footer from appearing on the first page, H=2 must be included in the main format line.

9. The computer will not accept a change in the top margin within a document. This presents a problem when doing manuscripts because the top margin differs from the first page to the second and succeeding pages. The most efficient way to overcome this problem is to set the top margin in the main format line for the margin used on the second page. After closing the header/footer block, enter the number of times needed to lower the title on the first page. This method may also be used when a header/footer block is not being used by entering after the main format line.
10. Side headings present another problem since many textbooks are suggesting a TS before and a DS after side headings. It seems to be most efficient to DS before and DS after these side headings and type in all caps, since you can not underline using Scripsit. If a TS before is preferred, the line space should be changed to>LS=1 enter; then enter one more time. To change the line space back to>LS=2 enter and then type the side heading.

>LM=15 RM=75 TM=6 BM=60 LS=1 PF=2 C=Y J=N(E)* *(E) denotes ENTER

[HS>FR=Y (E)
Correcting Typing Errors (E)
[P>#] (E)
(E)
(E)
](E)

CORRECTING TYPING ERRORS

In most typewriten copy, errors should be corrected. Several methods or procedures that may be used for error correction are given in brief form in this short report.

Rubber Typewriter Eraser

Process. By an abrasive action the rubber eraser actually removes the typed error form the paper.

Types of rubber eraser. Rubber typewriter erasers are available in several types: (1) wheel type, with or without a brush for removing eraser crumbs from the paper; (2) pencil types--one type has a rubber eraser on one end with a brush on the other; the other type has a regular typewriter eraser on one end with a soft rubber eraser on the other end for use with carbon copies; and (3) electric erasers similiar to those used by draftspersons.

Method to use. These are the steps to follow in making error corrections with a rubber eraser:

1. Turn the platen or cylinder forward a few spaces; then move the carriage to the extreme right or left so that the eraser crumbs will not fall into the machine. On the Selectric typewriter, move the element to the right or left.

2. Lift the paper bail out of the way. Pull the original sheet forward and place a card (3 by 5 inches or slightly larger) in front of, not behimd, the first carbon.

BEST COPY AVAILABLE

Types of correction paper. Correction paper is available in several types, among which are the following: (1) correction tape (reel-type dispencers) and (2) correction paper strips. A slightly different type of correction paper is available for making corrections on carbon copies. The latter type of correction paper also is available in a variety of colors.

Method to use. Follow the steps outline below:

1. Backspace to the beginning of the error.

2. Insert the correction tape or paper strip behind the typewriter ribbon and in front of the error.

3. Retype the error exactly as you made it. In this step, power from the correction paper is pressed by force of the keystroke into the form of the error, thus masking it.

4. Remove the correction paper; backspace to the point where the correction begins and type the correction.

Disadvantages. The power correction can rub off and expose the original error. Also, at the present time, correction-paper corrections may not be satisfactory for copying an original by certain photocopying processes because ther original error may appear on the copies.

Correction Fluid

Process. Correction fluid covers or masks the error with a penetrating liquid which leaves an opaque substance on the paper. Correction fluid is available in colors to match paper commonly used in the business office.

BEST COPY AVAILABLE

```
>RM=75 LM=15 TM=6 BM=60 LS=1 PF=2 C=Y J=N_
_
_
_
CORRECTING TYPING ERRORS_
_
_
>C=N LS=2_
```
In most typewriten copy, errors should be corrected. Several methods or procedures that may be used for error correction are given in brief form in this short report._
```
>LS=1_
_
>LS=2_
```
Rubber Typewriter Eraser:$

Process. By an abrasive action the rubber eraser actually removes the typed error form the paper.$

Types of rubber eraser. Rubber typewriter erasers are available in several types: (1) wheel type, with or without a brush for removing eraser crumbs from the paper; (2) pencil types--one type has a rubber eraser on one end with a brush on the other; the other type has a regular typewriter eraser on one end with a soft rubber eraser on the other end for use with carbon copies; and (3) electric erasers similiar to those used by draftspersons.$

Method to use. These are the steps to follow in making error corrections with a rubber eraser:$

1. Turn the platen or cylinder forward a few spaces; then move the carriage to the extreme right or left so that the eraser crumbs will not fall into the machine. On the Selectric typewriter, move the element to the right or left.$

2. Lift the paper bail out of the way. Pull the original sheet forward and place a card (3 by 5 inches or slightly larger) in front of, not behimd, the first carbon. This card will protect the carbon copy from smudges as the erasure is being made and will prolong the life of the carbon paper.$

3. Flip the original back and make the erasure with a hard eraser. Brush or blow the eraser crumbs off the paper.$

4. Move the protective card to a position in front of the second carbon if more than one copy is being made. Erase the error on the first carbon copy and on all other copies in a like manner.$

5. Remove the card and type the correction.$

When erasing, be careful that your fingers do not smudge the copy as you hold the paper. Some typists use an eraser shield to protect the surronding typing. To erase on the upper two thirds of the paper, turn the cylinder backward so that the paper will not slip out of the typerwriter as you erase the error.$

Diskdvantages. A rubber eraser must be used with care, as it is possible to rub a hole in the paper. Also,

eraser crumbs must be brushed away from the typewriter because if they fall into the basket they can cause sticky key action._
>LS=1_

Correction Paper_

>LS=2_
Process. Correction paper covers (masks) the error with a powerlike substance. Correction paper comes in colors to match the colors of paper commonly used in the business office--white, blue, pink, yellow, etc._
Types of correction paper. Correction paper is available in several types, among which are the following: (1) correction tape (reel-type dispencers) and (2) correction paper strips. A slightly different type of correction paper is available for making corrections on carbon copies. The latter type of correction paper also is available in a variety of colors._
Method to use. Follow the steps outline below:_
1. Backspace to the beginning of the error._
2. Insert the correction tape or paper strip behind the typewriter ribbon and in front of the error._
3. Retype the error exactly as you made it. In this step, power from the correction paper is pressed by force of the keystroke into the form of the error, thus masking it._
4. Remove the correction paper; backspace to the point where the correction begins and type the correction._
Disadvantages. The power correction can rub off and expose the original error. Also, at the present time, correction-paper corrections may not be satisfactory for copying an original by certain photocopying processes because ther original error may appear on the copies._
>LS=1_

Correction Fluid_

>LS=2_
Process. Correction fluid covers or masks the error with a penetrating liquid which leaves an opaque substance on the paper. Correction fluid is available in colors to match paper commonly used in the business office._
Type. Correction fluid is packaged in a small bottle with an applicator brush attached to the inside of the cap. A liquid thinner can be used for thinning the correction fluid if necessary._
Method. Here are the steps to follow when using correction fluid:_
1. Turn the cylinder up a few spaces._
2. Shake the bottle; remove the applicator from the bottle; daub excess fluid on inside of bottle opering._
3. Apply fluid sparingly to error by a touching action over entire error._

SAVING AND LOADING OF DOCUMENTS

1. When saving a document from a slave computer to a diskette in the host computer, the operator performs the following steps: (1) Press break key; (2) Type S; (3) Space one time; (4) Type the name of the document; (5) Type a colon and the number 1 to indicate it is being saved on disk drive 1; and (6) Press the ENTER key. When the saving process is complete, the cursor will reappear on the screen.
2. In a classroom situation, where students are saving their work to a diskette, each student should use their name or code. Be aware of students with the same first name and make a change to prevent destroying documents.
3. It is important that the student use the same name or code each time. This approach will prevent students from forgetting the way the document has been saved. Further, a minor change such as using the day's date will prevent erasing a previously saved document. The following is a suggested Save Command:

   S June30 :1-

4. When loading a document from the host to a slave, the operator performs the following steps: (1) Press the break key; (2) Type L and space; (3) Type the code used plus :1; and (4) Press the ENTER key. It should be stressed that if an S is used when desiring to load, it will erase the document saved under that command and replace it with whatever is in the computer memory at that time.

BIBLIOGRAPHY

Crawford, Erickson, Beaumont, Robinson, and Ownby. Basic Keyboarding and Typewriter Applications. (Cincinnati, Ohio: Southwestern Publishing Company).

Hoga, William James. Using Scripsit for TRS-80 Model III and Model I. (Belmont, California: Wadsworth Electronic Publishing Company).

Lassenberry, Crawford, Erickson, Beaumont, and Robinson. Century 21 Typewriting. (Cincinnati, Ohio: Southwestern Publishing Company).

Meroney, John W. Word Processing Applications in Practice. (Cincinnati, Ohio: Southwestern Publishing Company).

_____. Getting Started With TRS-80 Basic. (Fort Worth, Texas: Radio Shack Corporation).

_____. TRS-80 Model III Disk System Owner's Manual. (Fort Worth, Texas: Radio Shack Corporation).

_____. TRS-80 Radio Shack: Scripsit Word Processing System Training Program. (Fort Worth, Texas: Radio Shack Corporation).

_____. TRS-80 Software Library: Addendum for Scripsit, Disk Version 26-1563. (Fort Worth, Texas: Radio Shack Corporation).